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Original Communications

CONCERNING OCULAR EXAMINATIONS IN THEIR RELATION TO GENERAL MEDICAL AND SURGICAL INVESTIGATIONS. (Illustrations.)

By G. E. de Schweinitz M. D., Philadelphia, Pa.

Permit me to express my high appreciation of the honor and pleasure which is mine in that, on the kind invitation of your President, I am privileged to address the members of the Medical Society of Virginia.

Fully aware that among you are a number of physicians who devote their lives to that department of our professional work with which for many years I have been identified, I am equally aware that the majority of the men and women here assembled are chiefly concerned with the wider fields of general medicine and surgery. Hence, it is proper that this address shall concern itself with some subject in which we have mutual interest. The topic chosen has been submitted to your President, and has received his approval and, although the subject-matter is far from unfamiliar, it may be, that in repetition and in emphasis, points of common advantage may be elicited.

In the 13th century Roger Bacon said, after describing the properties of a convex lens, "therefore this instrument is useful to the aged and to those having weak eyes," and thus relieved ocular distress of which six centuries before Aetius had written but could not explain. To Kepler, in the 17th century, we are indebted for our earliest knowledge of myopia, and quite early in the 19th century James Ware discovered the real significance of hyperopia, or far sight, but it remained for Donders, fifty odd years later, to point out the meaning of the pain occasioned by a hyperopic eye. Early in the same century the Royal Astronomer, Airy, had demonstrated astigmatism and corrected it in his own eyes, and later Isaac Hays in our country, aided by the optician, McAllister, performed the same service for a sixteen year old girl with defective vision. But the real knowledge in this country of the evils of eye-strain we owe to Weir Mitchell and the labors of Isaac Dyer and William Thomson. Just fifty years ago Mitchell said: (1) "What I desire, therefore, to make clear to the profession at large is that there are many headaches which are due to the disorders of the refractive or accommodative apparatus of the eyes; (2) that in these instances the brain symptom is often a most prominent and sometimes the sole prominent symptom of the eye troubles, so that while there may be no pain or sense of fatigue in the eye, the strain with which it is used may be interpreted solely by occipital and frontal headaches: (3) that the long continuance of eye troubles may be the unsuspected source of insomnia, vertigo, nausea and general failure of health: (4) that in many cases the eye trouble becomes suddenly michievous owing to some failure of the general health, or to the increased sensitiveness of the brain from moral or mental cause." We have elaborated our methods, improved our instruments of precision and extended the list of interpretations of eye-strain, but otherwise we have been able to add but little to this complete and compact presentation of the facts of the case.

This brief historical reference may be pardoned, familiar as it doubtless is to all of you, because these were really great observations. We rejoice in the value of these discoveries, and should not forget the names of the men to whom we owe them.

Today, cognizant of the fact that fully seventy-five per cent. of functional headaches are due to refractive error and muscle imbal-

*Resume of an address presented by invitation at the fifty-third annual meeting of the Medical Society of Virginia in Norfolk, October 31-November 3, 1922.

ance, examination of the eyes in this respect has become a routine procedure, and its necessity is realized almost as well by the laity as by the profession. Hence, it is not necessary, in general terms, to elaborate this matter as a professional obligation. But certain facts in this relation, although also well known, should be emphasized:

1. Eye-headache, although it may at times have preferred localization has no pathognomonic situation; it may be situated in any portion of the cranium.

2. Eye-headache and eye-pain are not necessarily coincident manifestations; frequently the eyes themselves are painless.

3. Eye-headache, and in fact, all manifestations of eye-strain, general as well as local, are caused by small, often trifling, refractive and muscular errors, more frequently, in fact, than by the higher anomalies of refraction; the commonly asked question, "has this patient enough refractive error to cause headache," is useless; if any error exists, other things being equal, it may be sufficient to establish an etiologic relationship.

4. Just as eye-headaches do not necessarily select definite areas of the cranium for their position, so also the head may be painless, and a different place may be attacked—the neck, the intrascapular region, the base of the spine, the praecordium and the gastric area being favorite localizations; this fact too often escapes notice and hence a correct interpretation escapes detection.

Of the long list of eye-strain interpretations classified as "nervous disturbances," general and local, ranging from vertigo and insomnia to convulsive seizures, I shall not speak. They are well known. But it is worth while to refer to this matter as it relates in general terms to what may be called gastric and intestinal disturbances, that is, constipation, gastric and intestinal indigestions, especially of the flatulent types, because although a distinguished internist many years ago discussed and emphasized this subject, it practically always escapes mention in books on internal medicine. Fully aware that when an ophthalmologist begins to talk about "eye-strain," he runs the risk of being accused of over-emphasizing the evidence in the case, and fully aware, also, that this whole matter has not always escaped exaggeration, and, in fact, has sometimes earned this criticism, none the less, this brief review is not out of place in a paper which concerns itself with co-operative work between medical men and ophthalmologists.

Let me now for a moment reverse the shield, so to speak, and say a few words about what has been called "the mimicry of eye-strain," and set before you a few illustrative examples. A notable one is this: A patient has as his chief symptom persistent itching, burning, smarting and formication of the eyelids, especially their ciliary borders, increased by eye use. Surely this is a common sign of eye-strain, and often promptly disappears after suitable optical correction, but just as surely in a fair number of cases is utterly unrelieved by glasses. This manifestation is due to what has been vaguely and unscientifically called the lithaemic state, or often the uric acid diathesis. It is somewhat analogous to the hot and itching and tingling feet at night in the subjects of gout, and is cured, not by glasses but by treatment, dietetic and otherwise, directed to the relief of the disordered nutrition.

Another interesting manifestation is a fugitive edema of one or both eyelids, or sometimes a persistent edema of the palpebral margin, with or without headache, uncured by optical therapeutics or local applications. Naturally, ocular reason being excluded, renal disease, paranasal sinus infection, or the administration of certain drugs, notably arsenic, may be accused. These being eliminated, there remains the arthritic type which yields to measures such as have been described.

Another type, and I leave this part of the subject: At various intervals the patient experiences a sharp prick of pain, as if a needle were thrust into the eye, and examination will usually reveal one or more very tender spots, generally in the upper scleral expanse, sometimes surrounded with a slight spot of injection. Easily attributed to refractive error, which, indeed, may often be the cause in a fair number of the cases, these tender spots and pin-thrust pains interpret a gouty or uratic diathesis and yield to suitable measures. So, too, there may be intermittently the sensation of a foreign body so exactly simulating that produced by a cinder or similar particle that it is with difficulty the patient is persuaded of its absence. Such patients often,

indeed, always, need the correction of refractive error, but not infrequently that is not sufficient. It may be a gouty manifestation, but more often depends upon neurasthenia, and is the analogue of the sore spots of which such patients complain on the sternum, in the inframammary region and elsewhere. The point which it is desired to make plain is not that glasses should be disregarded; quite the contrary, the most exact correction should be ordered, but if they are as accurately adjusted as is possible, that other etiologic factors be considered and attention to them in co-operation with general medicine be considered and carried out.

It has always been a matter of some astonishment to me that practitioners or internists do not more frequently use the ophthalmoscope as an instrument of precision to aid in their work. They are quick to turn to and use the best and newest types of stethoscope, sphygmomanometer, electro-cardiographs, percussion apparatus, and electric apparatus of all kinds. Why not an electric ophthalmoscope, so easy to acquire and so easy to learn? Perhaps I should not complain as they avail themselves of its information through the aid of the ophthalmologist, and I frankly hope they won't stop. But it may well be that so-called expert advice in this respect is not always immediately at hand, and at any rate, if their own examinations are unsatisfying, others can always later be obtained. The recognition of arteriosclerosis in the developed stage presents no especial difficulties—the condition of the pulse, the character of the heart sounds, the increased tidal wave on the sphygmogram, and the elevation of tension recorded by the sphygmomanometer are well-known diagnostic indices.

But a positive determination of the existence of arteriosclerosis in the earlier stages is not so easy, and it is more definitely established that the ophthalmoscope may reveal these "positive" evidences before the general disease has become manifested. Moreover, this fact should not be lost sight of, viz., that the four cardinal indices previously named are not alone found in arteriosclerosis, but, to quote Alfred Stengel, may be present in varied conditions of the system, organic and nervous in origin, and in which arteriosclerosis plays no part except as a consequence. So far as I know, the ophthalmoscopic signs are not produced by any condition other than arteriosclerosis,—it may be local, it may be general. Hence, it will not, I trust, be out of place to review and illustrate a few of the ocular signs.

The remainder of the paper consisted in a brief lecture illustrated with water colors depicting: (1) the vascular changes visible in opthalmoscopic examination of the eye-grounds of the subjects of arteriosclerosis especially of the carotid area, from the earliest indications to the late stages; (2) various types of renal retinitis and of the retinitis due to pregnancy, associated with albuminuria, and without notable vascular changes; (3) various types of diabetic retinitis, so commonly associated with vascular disturbances; (4) the eye-ground changes in association with increased intracranial pressure, especially choked disc, in its early, fully developed and subsiding stages; (5) so-called spurious optic neuritis and the methods of making a differential diagnosis, notably by studies of the size and shape of the "blind spot;" (6) the effect of cerebral decompression; (7) the presence of tubercles in the choroid, where they are the only lesions, and where they are associated with papillitis; also proliferating retinitis due to tuberculosis; (8) the eye-grounds of patients the subjects of methyl-alcohol poisoning, and of tumors in the pituitary body. Twenty-one water colors, with brief clinical histories, were utilized in this demonstration.

1705 *Walnut Street.*

Discussion.

Dr. C. C. Coleman, Richmond: Dr. de Schweinitz renders a real service to the profession of this State by presenting in such an impressive way the phases of his specialty which have a bearing upon the work of those in other fields of medicine.

I regret that Dr. de Schweinitz was not here last night to discuss ophthalmological diagnosis in reference to brain tumor. While his demonstration makes an appeal to every department of medicine, the part that particularly interests me is the study of the eye as a factor in neurological diagnosis. It is true that of all the things which have to do with diagnosis of brain tumor, the study of the eye perhaps takes precedence over any other single investigation. I think we are beginning to realize the dangers of partial optic atrophy from a high degree of choked disc. My own experience has been that most of the patients with brain tumors, who were allowed to continue with a high degree of choked disc from intracranial tension, are very apt to have some impairment of vision, even though the choked disc should subsequently be relieved by dealing successfully with brain tumor. It is of the greatest import-

ance to relieve the pressure upon the disc before fibrous tissue changes take place.

I am glad that Dr. de Schweinitz has called attention to the use of the ophthalmoscope by internists, neurologists and those who attempt to do neurological surgery. While the refinements of an ophthalmological diagnosis naturally belong to those whose interests lie in this particular field, it is essential that all who are interested in the discovery or treatment of lesions of the central nervous system should be able to recognize a choked disc or impairment of the visual fields.

Dr. J. Warren White, Norfolk: I am glad Dr. de Schweinitz brought out the importance of the routine use of the ophthalmoscope. In arriving at a diagnosis I feel that the ophthalmoscopic picture is important in the same way as the laboratory or X-ray. It is not necessary, however, for those who are not making a specialty of ophthalmology to be able to interpret the different pathological conditions, but to familiarize themselves with the differences between the normal and the pathological.

Dr. A. A. Burke, Norfolk: There are one or two points Dr. de Schweinitz brought out that I must take issue with him just a little bit. I do approve of the internist and others using the ophthalmoscope, but some of us have an idea we can make a diagnosis with the ophthalmoscope when we can't.

Dr. de Schweinitz showed a case of chronic astigmatism in which he was unable to say at first whether it was a case of choked disc or not. I recently had a case that was sent to me. I examined the eyes and they looked very much like choked disc, but I found it was a very high degree of astigmatism. Ophthalmogists would very easily be led astray unless they were able to refract the cases. Of course, as Dr. Hill said, 20/20 means nothing because you may have 20/20 central vision but your peripheral vision may be poorer. You can get more information by doing a visual field. I think visual field examination should be made in every case, and there are very few cases on which I do not do a visual field or have it done. You frequently do not have very much time if you are going to see more than four or five cases a day, but you can have someone in the office trained to do that. That has been our method; that is what we have tried to do. The visual field will frequently throw light on the case when the ophthalmoscope will give you no information at all.

In regard to optic neuritis, I had a case sent me with a vision of 22/100, and I could not improve it. He thought he had a sinus infection, and probably from pressure or through the circulation was affecting the optic nerve. This proved to be a case of maximal astigmatism, and the vision improved with glasses to 20/20. There was no indication of any disease there at all. So another point is that we should take into consideration whether these cases are improved or unimproved with glasses after making the ophthalmological examination.

THE DIAGNOSIS OF BRAIN TUMOR.*

By BEVERLEY R. TUCKER, M. D., Richmond, Va.
Professor of Nervous and Mental Diseases Medical College of Virginia.

The diagnosis and localization of tumor of the brain is fraught with many difficulties and is far from being, solely, a matter of anatomical knowledge, and precision in the interpretation of organic symptoms. These are only two essentials and one must use, in addition, general medical acumen, intuition, deduction, experience and even imagination in the attempt to arrive at a diagnosis.

The diagnosis of tumor of the brain naturally falls into three considerations. *First*, Is there a tumor present? *Second*, If so, what is its location? *Third*, If a brain tumor is present, localizable or not, shall we advise operation? Further than this, that is as to the character of the operation, et cetera, the deponent sayeth not.

Is a Brain Tumor Present?

One should not, in answer to this question, rely upon the "cardinal symptoms" found in text books, for these symptoms, headache, vomiting, vertigo, choked disc, cranial nerve palsies and mental changes—may or may not be present.

In one of our series, a tumor of the pituitary with acromegaly and mental depression, there was no vomiting, vertigo, choked disc or cranial nerve changes and the headache was general in character. In another case, a large left frontal tumor, there was no headache, vomiting or vertigo and no choked disc until late in the condition. Still another patient had no cranial nerve palsy, vomiting, vertigo or choked disc although autopsy revealed a large right frontal glioma. Many similar cases could be cited. Thus we are led to believe that brain tumor may exist without giving the symptoms of increased intracranial pressure or of space restricting lesions. On the other hand, Frazier has stated that "the mimicry of tumor by hydrocephalic conditions is not unusual." Looking at the problem from still another angle, brain tumor may, at times, give such marked signs of increased intracranial pressure that the diagnosis of hydrocephalus may be made and the tumor not suspected. One of our series was a boy with a large head who had vertigo, vomiting and much increased spinal fluid pressure. He had been considered a case of hydrocephalus until we made the diagnosis of cerebella tumor based chiefly upon the symptom of "over-reaching." This diagnosis was confirmed at autopsy.

The reason for some cases of brain tumor having the so-called cardinal symptoms, and

*Read as part of the Symposium on Brain Tumors at the fifty-third annual meeting of the Medical Society of Virginia at Norfolk, October 31—November 3, 1922.

others not, seems to rest upon several factors. The character of the growth may be either space restricting and act as a displacing foreign body intruding into the cranial space, or infiltrating, the lesion, like the decay of an apple, eating its way by replacing normal brain tissue with tumor tissue. Another factor may be that the tumor may grow slowly in certain directions without giving general or local symptoms till late.

The symptoms of some tumors, especially gliomas, as I have pointed out elsewhere, may be preceded by head injury. In one of our series a boy, previously perfectly well as far as his parents knew, was struck upon the back of the head by a well bucket. This injury was followed within a week by symptoms of a cerebella tumor. A tumor in this location, without hemorrhage into it, was found at autopsy four weeks later. In this case the injury seems to have caused a rapid development of symptoms in a latent growth. In other cases the focus of the injury seems to have been the starting point of the tumor growth.

Rapid development of the symptoms of a brain tumor is not always due to injury. A spontaneous hemorrhage may take place in or about the tumor mass, or a tumor may shift its position and bring on nerve symptoms or, for some obscure reason, the neoplasm itself may suddenly take on increased rapidity of growth.

Tumors of the brain are not so rare as was at one time supposed. Their pathological character is varied and will not be here discussed.

It is not a fact that blood pressure increase is a symptom of brain tumor. In fifteen of our series in which this question was studied no relationship could be traced. Lumbar puncture is of value in the diagnosis of brain tumor in connection with the question of syphilis. It is a dangerous procedure, as stressed by Cushing, if the growth is subtentorial. The globulin content of the fluid may or may not be increased and the pressure may not be increased in infiltrating growths and certain growths causing internal hydrocephalus. Should the patient have a positive Wassermann, either in the blood or fluid, or in both, it does not, of necessity, follow that the growth is a gumma. In one of our series an endothelioma was found in a patient who had a strongly positive Wassermann.

We should remember that focal symptoms, themselves, frequently guide us in the general diagnosis that a brain tumor is present. This was especially true in two cases of young men in whom gradual increasing paralysis of one side of the body occurred, in each case the arm becoming first involved and then the leg. In another case presenting a similar onset, the diagnosis was missed because the patient, a plumber, had positive evidence of lead poison. A cortical glioma was found at operation at another clinic.

One should always bear in mind the possibility of multiple lesions, especially those of carcinomatous metastasis and tuberculosis. Multiple tumors are said to be more common in the cerebellum than in the cerebrum. One of our series had cerebella symptoms with oculomotor paralysis of one eye. Two lesions were found, one on the under surface of the cerebellum and the second in the oculomotor nucleus. It should also be noted that the tumors of one hemisphere may invade the other hemisphere. This has occurred several times in our series. Other brain lesions, as thrombosis or hemorrhage, may be present in addition to tumor and cerebral edema may confuse the picture. One of our cases had a temporal lobe hemorrhage on one side and a temporal lobe tumor in the other hemisphere.

Skull lesions may give symptoms somewhat resembling brain tumors. These are usually osseous plaques and bony depressions or ingrowths. One of our cases showed at autopsy a piece of beer bottle from an old injury pressing into the brain substance and in another case there was a pyramidal shaped ingrowth of bone and, where it pressed into the brain, gliomatous tissue degeneration had taken place.

Certain conditions occur frequently enough in brain tumor cases to deserve attention. Exophthalmos, especially unilateral exophthalmos, may be encountered. Convulsions, Jacksonian in type or general, may occur, trigeminal pain, particular attention to which has been called by Cadwallader, and even glossopharyngeal pain, as pointed out by Weisenburg, may constitute brain tumor symptoms. Gradually increasing paralysis, changes in the visual and color fields, reflex and gait changes,

and many other symptoms of localizing value may also aid in the general diagnosis that a brain tumor is present. We should also remember that the headache of brain tumor is usually localized near the affected area, though not always by any means; that the vomiting as a rule is without regard to meals and may be, but not necessarily, projectile in type: that the deafness is of the bone conduction type; that, whereas there is nothing pathognomonic about the mental symptoms, there is often some clouding of consciousness, that the choked disc is an edema due to mechanical pressure and not the neuro-retinitis of inflammatory origin; that it may be absent, early, late, slight, marked, unilateral or bilateral, and that cranial nerve palsies are, as a rule, not complete; that in central facial palsy the upper branch frequently escapes; that isolated glossopharyngeal paralysis is unknown in man (Purves Stewart); and that the spinal accessory nerve is rarely affected.

It is not uncommon for hysteria to resemble brain tumor and *vice versa*, or both may be present at the same time. This makes it important that brain tumor cases should be studied by someone familiar with functional neurology.

Encephalitis, with or without lethargy, with its cranial nerve palsies, occasional choked disc, mental symptoms, vomiting at times, frequent vertigo, headache and reflex changes, may be mistaken for brain tumor. The diagnosis is usually encephalitis, if the onset is febrile or follows influenza and is rapid. The symptoms are, as a rule, diffuse rather than local, and lethargy or double ptosis, without other oculomotor signs, is often present. General tremors and muscular rigidity are also more frequent in encephalitis.

Brain abscess and brain tumor are subject to similar diagnostic considerations except that in abscess especial attention should be paid to history of running ears, infection elsewhere in the body, penetrating head injuries, leucocytosis, temperature rise, and slow pulse.

Uremia, especially when the ordinary evidence of nephritis is not marked, may be mistaken for tumor of the brain. In all cases of brain tumor, not only a urinalysis, but also blood urea nitrogen estimation and kidney function tests, should be made. In uremia the clouding of consciousness is usually more profound and motor cranial nerve palsies absent. It should be borne in mind that uremia and brain tumor may co-exist.

Cerebral vascular disturbance, that is slow hemorrhage or thrombus, may resemble brain tumor. In one of our series we made the diagnosis of a thrombosis of the angular gyrus in a case in which we later changed the diagnosis to abscess of the same region. The patient for weeks had no temperature or leucocytosis. This case was operated on by Dr. Coleman and the abscess found.

Brain Tumor Localization.

This subject is best approached by adopting, with slight modification, the usual anatomical subdivisions of the brain. Of course, tumors of any special locality may have, in addition to their focal symptoms, any or all of the general symptoms of brain tumor. Bearing in mind that tumors of one region, as they grow, may invade contiguous regions, or even the opposite hemisphere, and that contra-lateral pressure symptoms may occur, we still have rather characteristic symptoms which relate back to specific areas. By observing the diagramatic outlines herein presented and referring to the corresponding number in the text, the name of the area, and a list of the symptoms especially referable to a tumor of that area, may be noted.

The value of radiography in the diagnosis in certain cases is unquestionable. General or local brain pressure giving thinning or causing ridging or furrowing of the skull may be observed. Erosions through one or more plates of the skull may at times be seen. Sella turcica changes may be observed in both pituitary and pituitary neighborhood tumors. In one of our neighborhood tumors half of the sella was eroded away. One case showed a calcified area in the pineal region much greater than the normal size of the pineal gland itself and led to the diagnosis of tumor. It is a good rule to radiograph all cases suspected of being brain tumors and to do ventricle air injections, combined with radiography, in certain cases of doubtful localization.

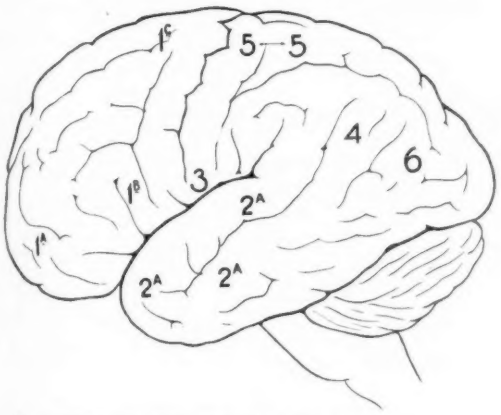
The Question of Operation.

Although many brain surgeons discourage decompressions, still we feel that it has a field of usefulness in cases not thought to be operable, or in some cases where an unsucess-

ful operation has been done. If it offers only temporary relief of such distressing manifestations as approaching blindness, violent headache, severe vomiting or mental stupor, it is justifiable. If a tumor, although localizable, is due to metastasis, a decompression for relief of symptoms is worth while. As a rule, however, we believe in operating for the tumor in a one or two stage operation, provided there is a fair chance of our localization being correct. Only experienced neuro-surgeons should attempt operations for brain tumors and the advent of the neuro-surgeon is a distinct asset both to the neurologist and the patient.

Brain tumors, not many years ago, were practically hopeless propositions and, whereas complete recoveries at present are far from as numerous as might be desired, still prolongation of life and amelioration of symptoms are common and some of our cases we count as complete and entire recoveries.

CORTICAL SURFACE BRAIN AND CEREBELLUM

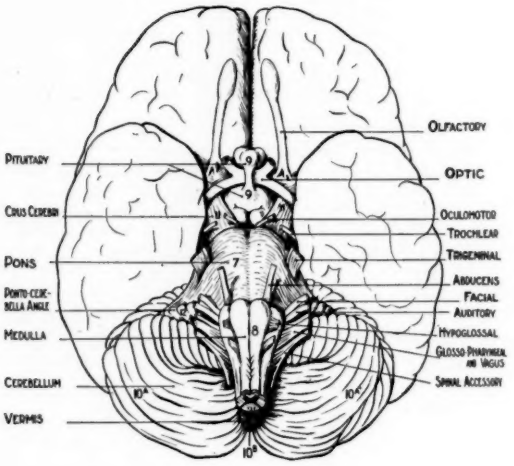


1. TUMORS OF THE FRONTAL LOBE.
   - A. Prefrontal area.
     - Mental changes, ethical and moral lapses and changes in disposition. Jocularity.
     - Sphincter neglect at times.
     - Restlessness and rolling from side to side with extremities flexed.
     - Orbit and frontal sinus may be invaded.
     - Pressure backward may give cerebella symptoms.
   - B. Postfrontal area.
     - Convulsive attacks frequent with contralateral deviation of the head and eyes.
     - In left sided, may have aphasia.
     - Anosmia may occur on side of lesion.
   - C. Motor area.
     - Convulsions on side opposite lesion.
     - Gradual paralysis on side opposite lesion but rarely completely hemiplegic and without marked circulatory disturbance.
     - Frequent loss of sense of position on side opposite lesion.
     - If extends across fissure of Rolando, sensory symptoms.
     - If cortical, convulsions usually precede paralysis.
     - If subcortical, paralysis precedes and convulsive movements apt to be more extensive.
2. TUMORS OF THE TEMPORAL AREA.
   - A. Few localizing symptoms.
     - Motor aphasia if lesion on the left side.
     - If pressure on the floor of Sylvian fissure, there may be word deafness and an aphasia in which the wrong word is said though the right one is known.
   - B. Of Uncinate Gyrus. (See chart No. 3).
     - Have "uncinate fits" which consist of hallucinations of smell and taste with brief "dreamy states."
     - May also smack lips and may, or may not, develop convulsions.
3. TUMORS OF THE FRONTO-TEMPORAL TYPE.
   - Word hearing, speech and word writing difficulty.
   - Unilateral deafness and tinnitus in acoustic tumors.
   - Trigeminal pain if Gasserian ganglion affected.
4. TUMORS OF THE ANGULAR GYRUS.
   - Word blindness, inability to appreciate the written word.
   - Concentric contraction of visual field in eye opposite side of lesion.
   - Hemi-sensory disturbance and hemianopsia if tumor deep seated.
5. TUMORS OF THE PARIETAL LOBE.
   - Lessened sensation on opposite side of the body.
   - Asterognosis (superior parietal convolution, but may also occur in lesions elsewhere).
6. TUMORS OF THE OCCIPITAL LOBE.
   - Hemianopsia, partial or complete.
   - Visual hallucinations at times with flashes of light.
   - If large and on mesial aspect may have complete blindness.
   - If on under surface may have cerebella symptoms from pressure downward.

Automobile Accidents.

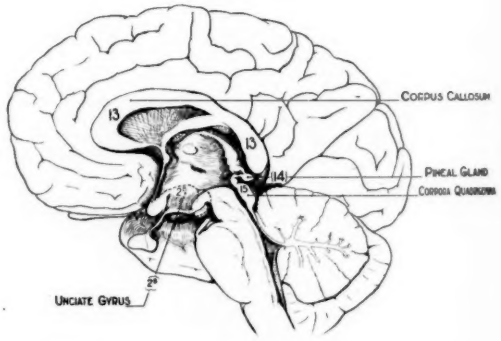
Rehabilitation News Notes gives startling statistics on automobile accidents in the United States. During 1921 an average of over 35 people were killed a day, totaling 13,000 killed by automobiles in 1921 alone. There seems a scarcity of data as to the number injured.

Under Surface Brain and Cerebellum



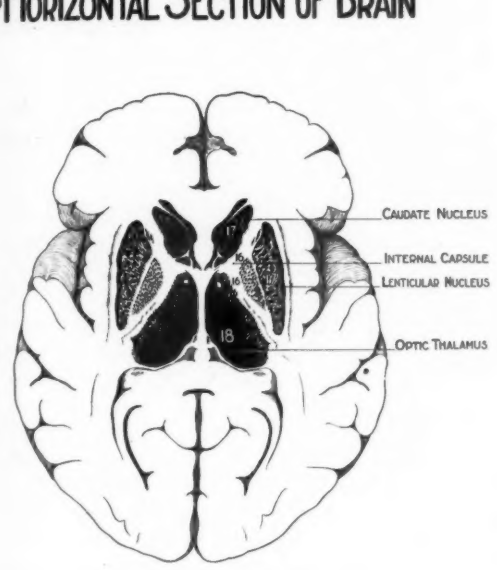
7. Tumors of the Pons.
   - Hemiplegia (usually) on side opposite lesion, also positive Babinski on this side.
   - Sensory loss (sometimes) on side opposite lesion.
   - Trigeminal, abducens, or facial nerve paralysis on side of lesion.
   - Nerve deafness on side of lesion may occur.
   - Nystagmus (frequent).
   - Inability (at times) to turn both eyes at same time toward side of lesion.
   - Hyperexia (may occur).
8. Tumors of the Medulla.
   - Cardiac symptoms.
   - Respiratory symptoms.
   - Bilateral involvement of limbs may occur (motor fibres caught at their decussation).
   - Bulbar symptoms from involvement of glossopharyngeal and hypoglossal. (Difficulty in articulation, deglutition, inability to protrude tongue and dribbling of mouth).
   - The abducens, facial, auditory and vagus frequently affected.
9. Tumors of the Pituitary Body.
   - Bitemporal headache frequent.
   - Acromegalic symptoms at times.
   - Frohlich's syndrome at times (increase in body fat and sugar tolerance with genital arrest.)
   - Upper temporal slant to visual fields or bitemporal hemianopsia.
   - Primary optic atrophy at times.
   - Polyuria not infrequent.
   - Convulsions frequent.
   - Somnolence, if third ventricle involved.
   - Oculomotor paresis, if tumor extends backward.
   - Sex characteristic changes may occur.
   - Pituitary may be affected from neighborhood growths.
10. Tumors of the Cerebellum.
    - A. Lobes.
      - Hypermetria (over-reaching) on side of lesion.
      - Lurching station or gait, with eyes opened or closed, usually to side of lesion.
      - Frequent choked disc and nystagmus.
      - Adiadokokinesia on side of lesion (inability to rotate hands symmetrically with the same rhythm and facility).
      - In lying down patient may roll to side of lesion.
    - B. Vermis.
      - Tendency to fall forward if lesion affects the anterior part, and backward if posterior part affected.
11. Tumors of the Crus Cerebri.
    - Hemiplegia on side opposite lesion.
    - Weakness lower part of face on side opposite lesion.
    - Oculomotor paralysis on side of lesion.
    - Non-intention tremor, sometimes, on side opposite lesion.
12. Tumors of the Ponto-Cerebellar Angle.
    - Combination of pontine and cerebellar symptoms.
    - Frequently begin with nerve deafness and tinnitus.
    - Vertigo and nystagmus common.
    - Trigeminal, abducens and facial nerve frequently affected. Others may be from extension.
    - Ataxia and weakness occur, usually greater on one side of the body.
    - Headache usually occipito-frontal.
    - Barany test usually positive.

Mesial Surface of Brain



13. Tumors of the Corpus Collosum.
    - No definite set of symptoms.
    - Sometimes motor apraxia (inability to perform certain movements although no paralysis) on left when lesion on left.
14. Tumors of the Pineal Gland.
    - More common in childhood.
    - Associated with precocious body and sexual growth in children.
    - Mental brightness not uncommon.
    - Drowsiness may be a feature late in cases or in adult cases.
    - If corpora quadrigemina also involved, bilateral oculomotor paresis with sluggish pupils may occur.

15. Tumors of the Corpora Quadrigemina.
Bilateral ptosis present usually with oculomotor weakness.
Weakness of upward and downward eye movement and poor convergence.
Pupil reaction often sluggish.
Hemianopsia if external geniculate involved.
Hearing at times affected.



16. Tumors of the Internal Capsule.
Difficult to distinguish from tumors of the cortex and from vascular lesions of internal capsule.
Rare.
Gradual hemiplegia with unconsciousness and usually without convulsions.
Sensation and vision affected if growth extends backward.
Transient deviation of eyes at times.

17. Tumors of the Caudate and Lenticular Nuclei.
Masked expression.
Muscular rigidity.
Non-intentional tremors at times.

18. Tumors of the Optic Thalamus.
Emotional Disturbance.
Decreased emotional movements of the face on the side opposite the lesion.
Athetosis sometimes.
Subjective sensory disturbance, at times, on the side opposite the lesion.

Tumors of the Anterior Fossa.
Mental symptoms similar to prefrontal tumors.
Unilateral loss of smell may occur.

Tumors of the Middle Fossa.
Trigeminal (sensory and trophic) and masseter (motor) nerves often affected.
Facial palsy on side of lesion frequent.
Nerve deafness on side of lesion frequent.

Tumors of the Posterior Fossa.
Symptoms resemble those of pons and medulla.
Cranial nerve symptoms precede those of motor involvement (Gowers).
Tendency, if cerebellar peduncle pressed, to deviate to side of lesion in walking.
Convulsions not uncommon.

Tumors of the Ventricles.
May arise from ependyma or ventricular neighborhood.
May, by obtrusion, occlude, or partially occlude, ventricle or may block foramen and dilate the ventricle.
Dandy's method of injecting air into the ventricles and radiographing them is an important aid in the localization of these tumors.

Tumors of the Meninges.
Symptoms correspond to the area covered.
May grow inward toward brain, or outward and corrode skull and be felt from exterior, or may grow both internally and externally.

Tucker Sanatorium.

THE IMPORTANCE OF OPHTHALMOLOGY AND OTOLOGY IN THE LOCATION OF INTRACRANIAL GROWTHS.*

By JOHN DUNN, M. D., Richmond, Va.

As medical knowledge advances, opthalmology and otology concern themselves constantly more and more with the localization of brain tumours. From the standpoint of today we blame yesterday for its remissness in applying the very simple rules whose recognition makes Today Yesterday's master.

Years ago, Otto Körner, writing of the local symptoms of brain abscess, divided these symptoms into three classes: 1. those which result from injury to the brain substance at the seat of the abscess; 2. those which result from inflammatory pressure about the abscess, and lastly, those which tell of injury to the cranial nerves inside the cranial cavity. He then takes the portions of the brain, in which occur abscesses secondary to temporal bone disease, states their functions and explains how the various symptoms arise. Had the principles involved in the above extract from Körner's work been systematically and thoroughly applied in the symptomatology of brain tumours. Today would have other cause to arraign Yesterday. The ability to transfer Körner's suggestions to the field of brain tumours and to successfully apply them in the interpretation of the latter's symptomatology pre-supposes a special knowledge of brain anatomy. I have

*Read by title as part of the Symposium on Brain Tumours, at the fifty-third annual meeting of the Medical Society of Virginia in Norfolk, October 31—November 3, 1922.

reference to the ability to visualize the brain tracts, not only as individual entities, but also in their anatomical relationship along their whole course to every other tract and to each centre. It furthermore pre-supposes a knowledge of what would be the result, expressed in symptoms, of the interference with each tract at any given point in its course.

Of the three great tracts in the brain, the internal capsule, the visual, and the vestibular, the first is the best known, because interference with its functions produces such evident and gross symptoms that they may not be overlooked by even the most casual observer. Given a case in which the general brain symptoms point to brain tumour, if accompanying these symptoms there is paralysis or paresis of one or more of the extremities, no one should be satisfied simply to posit the diagnosis brain tumour with involvement of the internal capsule, or its continuance. The portion of the internal capsule involved is the important point to be determined and further, whether the paralysis is the result of pressure on the capsular fibres or of their destruction. Many years ago, my brother, Dr. W. W. Dunn, brought me a young mulatto woman to determine the seat of a brain tumour whose symptoms were choked disc with blindness, paralysis of the fourth and some of the muscles supplied by the third nerve on the left side, and incomplete paralysis of the muscles of the right arm and leg. In the presence of the well-known syndrome of Weber, I jumped at the crude conclusion that the tumour was in the brain substance near the junction of the left crus with the pons. I told Dr. Dunn I thought the tumour was too deep for removal and suggested that he do a right-sided decompression with a view to lessening the intracranial tension, for its effect upon the choked disc. This was done. So far as relief of the tumour symptoms was concerned, no good was accomplished. A big hernia was the local result. Dr. Dunn then opened largely the left temporal region low down. A surface tumour, a gumma, as large as a lime was found. Its removal was followed by complete disappearance of the paralyses and restoration of vision, with relief from the general brain symptoms. The mulatto returned to work. All of the paralytic symptoms had been pressure symptoms, belonging to the second and third of Körner's divisions. To me, the case was the most instructive that ever came under my observation. It taught me from practical experience the well-known facts that blindness in the presence of choked disc is not necessarily always permanent; neither are the paralyses of the extremities, if the tumour be removed. It further taught me that not all brain tumours are hopeless, even though their accompanying symptoms would seem to indicate it.

This case has been selected because it shows the hopeful side of the apparently hopeless brain tumour problem and because it admits of the introduction of the place ophthalmology should play in the diagnosis of brain tumours. At the time I first saw this patient, she had lost her sight and all I could say as a result of my examination was that she had double choked disc in its pre-atrophic stages and that certain of the external ocular muscles of one eye were paralyzed. That the choked disc was double told of a general increase of intra-cranial pressure; that certain external muscles of one eye only were paralyzed, told on which side the tumour was situated, and rather clearly indicated that these paralyses were due not to pressure on the nuclei of the nerves involved, but were caused by stretching of the nerves themselves at their dural exits. The degree of blindness at the time the patient was first seen prevented the obtaining of one other piece of information which would most likely have been furnished had the patient been seen earlier, viz., the presence or absence of hemianopsic defects. The examination of the ocular fundus, in cases of suspected brain tumour, does not cease with the determination of the presence or absence of choked disc. The field of vision should be examined even when the discs are choked, for to the concentric contraction caused by the swelling of the nerve at its entrance into the ball may be added well marked hemianopsic defects, a valuable piece of information in many cases.

The science of ophthalmology concerns itself with every question which concerns vision and the brain surgeon has a right to demand from the ophthalmologist the explanation of every abnormal visual symptom he may discover in the examination of his patients.

Into the province of the ophthalmologist come, besides evidences of muscular imbalance, the many questions which centre about choked

discs, about retro-ocular tumours of the optic nerve, about the various field pictures which the frequent tumours of the hypophyseal gland produce, about the field changes from pressure upon the optic tracts, and lastly the determination of field contraction in tumours of the temporal lobe, and thence all along the course of the fibres of the optic radiations to the occipital centres.

Not only should the opthalmologist be able to chart the field defects in every case, but he should be able to interpret them and give to them their proper value in their relation to the other symptoms which make up for each case its clinical syndrome. Further than all these, he should be able to give a proper place to sector defects in the field which, although they are present in some cases of suspected brain tumour, are caused by lesions in the fundi.

Within the past few years, owing largely to the work of Barany and his school, the importance of an exact knowledge of the vestibular nerve tracts has been shown to the students of otology. When we have a clear view of the connections of these tracts in the cerebellum, in the medulla, and throughout the whole length of the pons; when we bear in mind that well-nigh every striated muscle fibre in the human body responds to functional disturbance of these nerves; when, further, we keep before us the fact that the free portions of these nerves are not uncommonly the origin of tumours which may be and have been diagnosed and safely removed surgically before they produce the great damage to the medulla and pons which they are sure to do if left in situ; may be and have been diagnosed while the eye backgrounds are normal, the importance to the otologist of the anatomy and functions of the vestibular nerves is at once apparent. It is to the otologist that the brain surgeons must look for aid in the interpretations of disturbances of the vestibular nerve ends and tracts, for, as the optic nerve begins, if, we may so express it, in the back of the eye-ball, so the vestibular nerves begin in the inner ear and intelligent differentiation of the disturbances of the functions of the inner ear is the result only of much study and practical experience for which the brain surgeon rarely has the time. Interpretation of disturbances of the vestibular nerve terminals and of the intracranial free portions of the nerve is, in the majority of cases, easy and, within reasonable limits, exact. Interpretation of the part played by the vestibular nerve in the clinical pictures presented by tumours of the cerebellum, of the cerebellar peduncles, of the medulla and the pons, and of the temporal lobes varies in difficulty with the size, character, position, etc. of the growth and with the general condition of the patient at the time the examination is made.

When we drop our head ever so little to either side, or, in fact, in any direction up or down, impulses are sent centralwards from the vestibular nerve terminals. These on reaching the highest centres give information as to the position of the semi-circular canals and thus of the head. Were the tracts which carried these impulses uninterrupted throughout their course, interpretation of pressure upon them or of their destruction at any given point would be comparatively as exact as similar disturbances to the nerve fibres in the internal capsules. Unfortunately, however, for easy diagnosis, when we drop our head in any direction, another set of impulses are sent chasing centralwards, I mean those which are brought into play by the changes in the tension of the skin, muscles and tendons which produce the given change in the position of the head. Under normal conditions, unless these latter impulses are first originated, there are no impulses from the vestibular nerve terminals. It is not unlikely that these two sets of impulses reach the same mid-brain ganglia at the same instant and are transmitted to the cerebellum and to the highest interpretative centres of the brain as a combined impulse, the combination being affected and checked the one against the other in common mid-brain ganglia. This applies also for the eye muscle responses, which are identical in kind whether they are brought into play by stimulation of the vestibular nerve terminals or by dropping the head toward any point of the cervical ring. Tumours of the mid-brain region may interfere with these various tracts after their combination, or singly, or both together, before they reach the mid-brain ganglia or with the ganglia themselves and, to the confusion thus produced, may add disturbances of the greater motor tracts. For all this, when one has the ability to clearly visualize the problem of the vestibular nerve, intelligent

testing of its functions is capable of giving information which may be most helpful in diagnosis. The teachings of the Barany school have only recently, as time goes, been brought up for the consideration of the otologist, yet already their importance as an aid in the exact location of brain tumours has become indispensable. As repeated chartings of the fields of vision have to be done in cases of brain tumours suspected of being along the visual tracts, so, too, repeated testings are often called for where we suspect the pressure of a growth along the vestibular tracts. As one becomes more and more skillful in carrying out these examinations of the fields of vision and of the vestibular responses, nothing is more apparent than the false interpretations which one made while working in the shop of inexperience. If we bear in mind the length of the visual and the vestibular tracts, and the importance of the structures along which they lie, and bear in mind that every disturbance of these tracts in their every portion belongs to the province of either the ophthalmologist or the otologist, the value of these two branches of the medical science to the brain surgeon is apparent.

411 *East Franklin Street.*

VISUAL DISTURBANCES IN BRAIN TUMORS.*

By EMORY HILL, M. D., Richmond, Va.

A fundamental consideration in the understanding of disorders of the visual apparatus is the fact that the eyes are an integral part of the central nervous system. Equally important in the understanding of disease of the central nervous system is a study of that extensive portion of the brain which is concerned with vision. Six of the twelve pairs of cranial nerves supply the eyes and lids. The so-called optic nerves, which are in reality sensory cerebral tracts, pass through narrow bony rings at the apex of the orbits, lie on the body of the sphenoid bone in intimate relation to the hypophysis and infundibulum, the cavernous sinuses and the under surface of the brain, penetrate the brain substance to reach the primary visual centres, and then pass, after a forward loop through the temporal lobes, back in the optic radiations to the posterior tip of the occipital lobes, making connections with tracts from other portions of the cerebral hemispheres. With such widespread associations it is obviously impossible to separate ophthalmology from neurology and out of the question to investigate a case of brain tumor without an exhaustive study of the visual mechanism.

Three types of change may take place in brain tumor cases; namely, disturbance of ocular motility and of sensation through damage to the cranial nerves concerned, changes in the eye grounds from increased intracranial pressure, and changes in the fields of vision from pressure upon the intracranial visual pathways anywhere between the orbits and the most posterior limits of the brain.

Ocular Muscle Palsies were noted in 34% of cases of Uhthoff. The third and sixth cranial nerves are involved, the latter often as a distant symptom from general increase of intracranial tension. Tumors at the base are the most likely to produce such paralysis. Diplopia and ptosis are the result. Pupillary changes are not of great diagnostic value. The fifth nerve may be involved, giving corneal anesthesia and neuroparalytic keratitis. In cerebellar tumor the sixth nerve is more often involved and nystagmus is more frequent. Paralysis of associated movements and conjugate deviations are also more frequent in cerebellar tumors.

Changes in the Eye Grounds. Knapp says that choked disc "is the objective sign of an organic brain disease." Statistics indicate that about eighty per cent of brain tumors cause choked disc, and the percentage is even higher in tumors of the cerebellum. This appearance in the eye ground is primarily and often solely the result of mechanical pressure in the cranial cavity with engorgement of the cerebro-spinal fluid in the spaces about the optic nerves, strangulation of the central retinal vein and blocking of the return flow of lymph through the nerve, resulting in an edema of the optic disc and high protrusion forward of the disc with but little extension of the process into the adjacent retina. Inflammation, in the strict sense of the term, is not a factor in this picture. Whatever suggestion of an inflammatory process we see is the evidence of a secondary proliferation of glial tissue upon the disc. Without attempting

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to enter into a controversy with the rhinologists, we may say that our present knowledge does not warrant the opinion that a choked disc can result from sinus infection without the intervention of increased intracranial pressure. Practically, it is of the greatest importance to distinguish between the choked disc or papilledema of mechanical pressure and the papillitis or neuro-retinitis of inflammation. It is not creditable to us that decompressions are done to relieve the latter condition, and mutilating surgery practiced upon every conceivable focus of infection when the patient is the victim of increased intracranial pressure. The blame for this rests with the ophthalmologist. He must differentiate two conditions which are totally different in origin and call for totally different treatment, and he must define these conditions accurately. We cannot expect intelligent interpretation of our reports upon eye grounds as long as the literature abounds with the indifferent use of the terms "papilledema" and "papillitis," "choked disc" and "optic neuritis," as if they were synonymous. It is true that the late stages of choked disc may be hard to distinguish from a neuro-retinitis, and that cerebellar tumors may give an appearance suggesting an inflammatory process, but these are rarer occurrences and do not warrant confusion of two readily distinguishable lesions in the great majority of cases.

The visual disturbance produced by choked disc may be absolutely nil. The highest degrees of edema are consistent with normal central vision and normal fields. A slight enlargement of the blind spots occurs later and contraction of the peripheral fields. Until the engorged retinal veins break, no diminution of central vision may occur. Therefore, the presence of normal vision does not for one moment exclude serious disease of the visual apparatus. Recurring transient obscuration with intervals of normal vision is of diagnostic value in cases of choked disc. When damage to vision has become extreme, we are dealing with later stages of brain tumor which ought not to have been reached without detection. It cannot be too strongly emphasized that 20/20 vision means nothing in the ophthalmic examination of a neurologic patient.

Choked disc occurs most often with tumors of the posterior fossa and tumors which are growing rapidly. It is much less frequent with tumors of the motor area of the cerebral cortex, on the convexity of the hemispheres and in the corpus callosum. Tumors in the region of the optic chiasm do not usually produce choked disc because the sheath of the nerves is compressed and increased intracranial pressure is not transmitted forward. A pressure atrophy is the common effect of such tumors and the association of bitemporal hemianopsia, or tendency thereto, establishes the diagnosis. Tumors at the base of the skull are more apt to produce cranial nerve palsies without ophthalmoscopic changes. Tumors originating in the brain substance cause choked disc more frequently than those arising in the meninges and compressing the brain without infiltrating it. Unilateral choked disc is said to suggest that the tumor is on the corresponding side; greater choking of one disc than the other has been thought to suggest that the tumor lies on the same side as the predominating edema of the disc, but these are very uncertain localizing signs.

Changes in the Visual Fields. The course of the visual fibres offers the possibility of localization of brain tumors, sometimes with very great accuracy. Each optic nerve represents the retina of the corresponding eye. The semi-decussation at the chiasm is quite definite, the medially placed crossed fibres representing the nasal halves of the two retinas, the laterally placed uncrossed fibres representing the temporal halves of the two retinas. Each tract, behind the chiasm, represents the temporal half of the corresponding retina and the nasal half of the opposite retina. This arrangement persists to the occipital visual centres. Thus, destruction of a nerve anterior to the chiasm destroys vision in the corresponding eye; destruction of the median fibres at the chiasm, which is the effect of a lesion in the midline, generally a growth of the pituitary body, destroys vision of the nasal half of each retina and produces a bitemporal hemianopsia. A binasal hemianopsia, due to destruction of the laterally placed uncrossed fibres, depends upon two symmetrical lesions and is naturally of very rare occurrence. Destruction of an optic tract causes impairment of the corresponding lateral halves of the two retinas and a homonymous hemianopsia; thus destruction of the right optic tract causes a left homony-

mous hemianopsia. With the homonymous hemianopsia of an occipital lobe tumor, visual hallucinations, alexia, optic aphasia, and mind blindness may be present. Word-blindness accompanies tumors which involve the angular gyrus. Cushing has recently called attentions to very striking hallucinations of vision in temporal lobe tumors, being clear cut pictures as distinguished from the vague impressions of light and colors which characterize hallucinations produced by lesions in the occipital lobes. Tumors involving the internal capsule may produce both hemianopsia and hemiplegia. Temporal hemianopsia and optic atrophy of one side with blindness of the other eye occur when a tumor in the anterior fossa involves one optic nerve and the chiasm.

Certain combinations of visual symptoms with evidence of disturbance of other functions help in the localizing of a brain tumor.

Tumors of the frontal region may lead to compression of the optic nerves and chiasm, along with impairment of mentality. Primary optic atrophy and temporal hemianopsia occur. If the tumor encroaches upon the posterior portion of the frontal lobe the motor centres are involved, with Jacksonian convulsions.

Tumors of the temporal lobe produce homonymous hemianopsia with clear cut visual hallucinations and occasionally uncinate attacks. Choked disc occurs from internal hydrocephalus.

Tumors of the hypophysis produce generally a primary atrophy without choked disc, and bitemporal contraction of the visual fields chiefly in the upper quadrants. Homonymous hemianopsia may result from pressure behind instead of just at the chiasm. The accompanying primary optic atrophy serves to differentiate these cases from tumor of the temporal lobe which produces choked disc along with homonymous hemianopsia.

Tumors of the supramarginal and angular convolutions are recognized largely by disturbance of the visual pathway. Homonymous hemianopsia occurs, with the addition of word-blindness in left-sided cases. Through involvement of the posterior end of the internal capsule, hemianesthesia and hemianalgesia occur. Hemiplegia is uncommon.

Tumors of the corpora quadrigemina and pineal body usually cause choked disc through the intervention of a hydrocephalus. A characteristic symptom is the failure of upward and downward rotation of the eyes. The third nerve is involved, with bilateral ptosis. Nystagmus is frequent. Third nerve palsy with deafness is a valuable combination when the inferior colliculus, which is an auditory centre, is involved. Precocious sexual development occurs with pineal body tumors in childhood.

Tumors of the cerebral peduncles, of which solitary tubercle is the chief example, involve the third nerve together with motor and sensory disturbance of the opposite half of the body. Alternating oculo-motor and body paralysis is a characteristic symptom. Unilateral dilatation of the pupil with ophthalmoplegia interna may occur. Eye grounds and fields are usually not affected.

Cerebello-pontine angle tumors produce bilateral choked disc late and paralysis of the sixth and seventh nerves; nystagmus is frequent. Deafness may occur early; in fact, the acoustic nerve is often directly involved. The sixth nerve is involved in eighty per cent. of cases, bilateral involvement being frequent. The facial may be involved and the fifth, giving rise to neuroparalytic keratitis. The third nerve of the opposite side may be involved along with the sixth nerve, giving a paralysis of lateral movement while convergence function of the third nerve is preserved. Such paralysis of lateral movement of the eyes with hemiplegia of the opposite side is characteristic of a lesion of the pons. Complete facial palsy and paralysis of lateral movement of the eyes, without crossed hemiplegia, may occur; also a facial paralysis with crossed hemiplegia in tumors of the lower part of the pons. Pupillary changes are not characteristic and nystagmus is unusual.

Tumors of the occipital lobe have as their most characteristic symptom a homonymous hemianopsia, or tendency thereto, with visual hallucinations of flashes of light in the blind half of the field. Cerebellar symptoms may occur from downward pressure of these tumors. Monoplegia and hemiplegia occur, the greater extent of paralysis being in tumors which reach deep and involve the internal capsule.

Tumors of the cerebellum produce choked disc more frequently than cerebral tumors, and more early. Ataxia, vertigo, a reeling gait, uninfluenced by closing the eyes, and nystag-

mus are the chief symptoms. General increase of intracranial pressure. rather than focal involvement of visual areas, damages vision in this tumor, and hemianopsia is absent, while paralysis of associated movements and conjugate deviations, together with sixth nerve palsy as a distant symptom, may occur.

Professional Building.

X-RAY EXAMINATIONS IN CASES OF BRAIN TUMOR.*

By DANIEL D. TALLEY, Jr., B. A., M. D., Richmond, Va.

The positive diagnosis and localization of brain tumor usually requires the services of the neurologist. the ophthalmologist and the brain surgeon. The roentgenologist may render valuable assistance in the investigation of suspected cases and exceptionally the X-ray findings may be so positive and striking as to establish the diagnosis; in a considerable percentage of cases, however, the ordinary X-ray examination will give no evidence of the presence of the growth. In the past few years the use of air injection into the ventricles of the brain in selected cases, followed by X-ray examination, has been of much value in the study of these growths.

The value of the X-ray as a factor in brain tumor diagnosis depends upon one or more of the following findings registered on the radiographs:

1. Actual visualization of the shadow of the growth itself or of a portion of same.

2. Alteration in the appearance of the cranial walls or floor due to pressure.

3. Abnormality in the structure of a portion of the skull by reason of the fact that the tumor involves the bone or is attached thereto.

4. Evidence in the cranial wall of a growth which has involved the brain by metastasis.

5. Alteration in the appearance of one or more of the cavities of the brain, after the injection of air for the purpose of visualizing these cavities.

The direct visualization of a brain tumor on the plate is technically impossible save in a very small percentage of cases. Most tumors are composed of tissue which does not vary appreciably in density from the normal brain tissue, and therefore casts no contrasting shadow. It must likewise be borne in mind that the increased density of the cranial bones is registered on the plates, which tends to obscure the visualization of slight differences in intracranial soft tissue density. Very occasionally a tumor may be partly calcified and may thus give very satisfactory evidence of its presence. A very few cases have been reported by reliable observers where a confirmed diagnosis of brain tumor has been made by visualizing the shadow of a soft tissue growth without other roentgen evidence, but in most cases such a diagnosis is impossible; certainly it is dangerous in the extreme to act on this finding alone.

Certain growths composed partly or entirely of bone tissue may arise from the wall itself and, extending inward, cause pressure symptoms. In such instances, the growth itself may be visualized, also any changes may be seen which have taken place in the structure of the adjacent portion of the affected cranial bone.

Pressure changes in the cranial bones may exhibit definite roentgenographic manifestations which are of very distinct value in determining, confirming or suggesting the presence of tumor. Such change may be caused by direct pressure from a growth itself upon the cranial wall or floor, general increased pressure may take place with resulting effects on the bony structures as a whole, or there may be a concurrent internal hydrocephalus, likewise causing changes in the appearance of the bones.

A growth which causes constant direct pressure on any one portion of the bone ultimately will cause either local atrophy or erosion. A notable example of this type is the tumor of the pituitary body or one which is in the neighborhood of the hypophysis. If the pressure be sufficient, changes will take place in the dorsum and floor of the sella and in the clinoids which may be more or less characteristic, though here the destruction from a neighborhood tumor may be difficult to distinguish from that due to general pressure. Some interesting work has been done by Carr in Cushing's clinic on the localization of tumors of the porus acousticus by observation of the pressure change in the internal auditory meatus. This work is based on reports from foreign observers.

The roentgen changes caused by general pressure include changes in the appearance of

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the sutures, dilatation of the venous channels and general alterations in the thickness of the walls of the skull which may be quite characteristic in appearance. As above stated, the appearance of the sella turcica may be very essentially changed by general increase in pressure.

Brain tumors which present fairly typical clinical evidence of their presence will show some of the above changes in perhaps fifty per cent. of the cases and the correct interpretation of the changes may be of considerable value in confirming the diagnosis or aiding in localization.

Even though these general changes when present be pathognomonic however, it must be admitted that they often represent an advanced stage of the disease. While some of these lesions are amenable to surgical methods at this stage, many growths which would be operable if discovered earlier, have now passed beyond the point where removal is possible.

Dandy, of Baltimore, conceived the idea of filling the ventricles of the brain with a medium which would cast a shadow of these cavities on the X-ray plate. He felt that by so doing the accurate outlines of the ventricles could be obtained, and since a large proportion of neoplasms modify the size or shape of the ventricles, a valuable aid to the early diagnosis and accurate localization of such conditions would be obtained. For practical reasons he selected air as the medium to be injected, the lesser density of the air to contrast on the plate with the greater density of the surrounding brain tissue.

After some of these injections, it was noticed that a portion of the air had passed through natural channels into the subarachnoid space, thus outlining some of the sulci of the brain. The idea was then conceived of substituting air for cerebrospinal fluid through a lumbar puncture and thus showing all parts of the arachnoid space, including the cerebral sulci, the cerebellum and the spinal cord. In pathological conditions affecting these structures, variations in the air shadows may give information as to the nature of such conditions.

The procedure just described has not been as much used as has the method of injection of air into the ventricles. In adults a small opening in the skull is necessary for the injection; in very young children the fontanelle may be made use of for this purpose. An amount of fluid is drawn off from the ventricle exactly equal to the amount of air injected, in order to avoid alteration of the intracranial pressure. By injecting into one lateral ventricle and later carefully turning the head in the proper manner, the air may be made to pass through the foramina of Monroe and through the third ventricle into the opposite lateral ventricle. X-ray studies may thus be made of each of these lateral ventricles separately. Still taking advantage of the fact that the air will rise above the remaining ventricular fluid, we may then turn the head so that the anterior horns will be uppermost and their outlines depicted with accuracy. The posterior horns may then be studied in the same manner, followed by any special positions that may seem applicable to the individual case.

A cerebral tumor of any size is likely to modify the contour of the corresponding lateral ventricle. Differentiation may often be made between cerebral and cerebellar tumors by means of the ventriculogram, showing the symmetrically enlarged lateral ventricles of hydrocephalus in the latter cases.

This work has stimulated widespread interest in the method and may reports of successful diagnoses are to be found in the literature. Dandy himself has collected quite a large series of cases and has published several reports of his investigations.

It is of course understood that air injection into the brain is a procedure not unattended by considerable danger, which should be attempted only by one skilled in brain surgery, as even then it is attended by a very definite risk. Dandy has stated that the procedure entails small risk as compared with exploratory craniotomy and that often the information to be obtained is of far greater value. Other observers do not seem to be entirely unanimous in their opinion as to the justification of the method, except in occasional selected cases, as it is a known fact that several deaths have occurred in the practice of competent brain surgeons which were directly attributable to air injection.

The opportunity has been given the writer to collaborate from the roentgenological standpoint in some of the work of Dr. C. C. Coleman in the study of brain conditions by means of pneumoventriculography, or ventriculo-

graphy, as the method has been termed. It is certainly of value from the diagnostic standpoint and presents possibilities which may increase its value in the future. Interpretation of ventricular shadows should be made with the greatest care and is beset with certain difficulties, but it may be that time and experience will greatly aid in overcoming these difficulties and will increase the ability in some cases to recognize even slight variations from the normal. We feel justified in saying, however, that ventriculography is still on trial and that the last word has not been said either for or against it.

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SOME POINTS IN THE TREATMENT OF TUMOR OF THE BRAIN.

By C. C. COLEMAN, M. D., F. A. C. S., Richmond, Virginia.
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The most striking feature of modern surgery of brain tumor is the growing tendency to adopt operative procedures which directly attack the tumor. It is true that palliative operations will continue to serve a useful purpose in the treatment of tumors of certain types and in others in unknown or inaccessible locations, yet it is a noteworthy fact that in very recent years, many tumors previously considered unsuited to removal are now quite regularly treated by radical extirpation.

In order to plan the successful removal of a brain tumor there must be of necessity an accurate localization of the growth. The preoperative study and localization of brain tumors were formerly made almost exclusively by the neurologist, while the surgeon became responsible for the conduct of the operative procedure and the care of the patient after the operation. Under such an arrangement the surgeon, being familiar with neither the clinical history of the patient nor the evidences of disturbance of brain function, generally faced the situation presented by a tumor of the brain with an attitude either of considerable helplessness or with one which imposed decided limitations upon his well-intended efforts. Much credit is due the neurologist for his keen interest in the subject and for his patience and co-operation while awaiting the arrival of a better surgical technic for intracranial lesions, but the problems of brain tumor localization must also be faced by the surgeon who accepts the responsibility of the operation. However, in many cases of suspected brain tumor the diagnosis will be arrived at only by the combined studies of the neurologist, ophthalmologist and neurological surgeon, often with the assistance of the various associated laboratory workers.

As long as new growths of the brain and its membranes were considered in one large group, without reference to location or histological character, attention was focused mainly on the general space-restricting properties of the growth, and therefore upon the resulting intracranial tension. It is not surprising that the ancient syndrome—headache, choked disc and vomiting, should have been long considered essential features of the diagnosis. While one or all of these symptoms may appear in the course of brain tumor, they are primarily the result of high intracranial tension and not connected with the early development of the tumor itself. Moreover, it is well-known that high intracranial tension often masks the early evidences of tumor, and sometimes produces misleading symptoms which multiply the difficulties of a localizing diagnosis. While the percentage of brain tumors recognized before the onset of general intracranial pressure is undoubtedly rising, in a large majority of cases at the present time, the leading symptoms when first seen by the surgeon are those of advanced intracranial tension. There is some encouragement in the fact that the late diagnosis of cancer, which was formerly recognized only after the onset of cachexia and regional metastases, has been superseded by an early recognition, at a time when treatment offers a chance for recovery. It is likewise true that if the diagnosis of brain tumor is postponed until the development of terminal brain compression, there is no good reason to expect that surgical treatment will give any better results than the treatment of cancer of the lip or breast when diagnosis waits upon widespread metastasis. There is a growing recognition of the fact that tumor of the brain is not a rare condition, and that they often have a life history of many years before producing disabling symptoms.

The rather general employment of the Wassermann test has helped to clear up the confusion of brain tumor with syphilis. Unfortunately, the history of brain tumor pa-

tients, even at the present time, will too often indicate that the diagnosis of gumma was held for months, until the oncoming blindness rendered the patient's condition so desperate as to arouse the suspicion of some intracranial neoplasm. It should be remembered that pressure-producing gumma of the brain is a very rare condition, forming less than four per cent. of certified brain tumors in at least one large series. A patient with a space-restricting lesion of the brain has, therefore, less than four chances out of a hundred to have a gumma, and more than ninety-five chances to have some other form of neoplasm. The fact that the patient has a positive Wassermann does not protect him from brain tumor any more than it does from cancer of the tongue. If there is a choked disc, even though it should be due to the intracranial pressure of gumma, it seems wise to protect vision by a subtemporal decompression, while intensive specific treatment is being administered to relieve the general infection.

The value of spinal puncture in the study of many neurological diseases, naturally led to its employment in the diagnosis of tumor. It is now quite generally known that in the presence of high intracranial tension, the withdrawal of spinal fluid may be followed by a serious risk to the patient; especially is this true if the tumor is subtentorial and is producing a high-tension hydrocephalus. No theorizing is necessary to appreciate the danger which may attend the sudden disturbance of pressure relations about the foramen by withdrawing spinal fluid at lumbar puncture when there is an obstruction of the ventricles. While the dangers of fluid removal are not so great in supratentorial lesions, the effects of general pressure, as shown by choked disc, should generally contra-indicate the employment of spinal puncture.

Spinal puncture may be helpful after the dura is opened in the course of an operation for supratentorial tumor, and when so employed it may reduce the tension to such an extent as to permit the manipulations necessary for exploration or removal of the growth.

The scope of X-ray study of brain tumor has been greatly widened following the introduction of ventriculography by Dandy, who believes that the combination of this method with the clinical study of the patient should make the localization of the tumor possible in every case. In the hands of those less skilled it is hardly probable that ventriculography as an addition to clinical study will solve all the difficulties of localization. Naturally, the procedure is highly technical and, to be of value, it requires not only familiarity with the problems of brain surgery, but also a knowledge of the variations in the air shadows of normal ventricles. The dangers of ventriculography are not definitely known but it is reasonable to believe that there are real risks connected with the procedure, and that these risks will depend upon many factors, some of which are fixed while others are variable. One must be impressed, however, by Dr. Dandy's experience with ventriculography, and it is to be hoped that others interested in the localization of brain tumors may, with increasing experience, find it as valuable a diagnostic aid as does the originator of the method.

With better localization of brain tumors there is an increasing boldness in the operative procedure. Wide excision of infiltrating glioma, formerly considered as unsuited to more than palliative treatment, is now being advocated and practiced with some success. Inasmuch as glioma reaches a fifty per cent. level in most brain tumor series and if successfully removed the patient is permanently relieved, there is a lively interest in surgical treatment of this very frequent type of tumor. Certainly decompression offers little as a rule in the treatment of glioma, and sometimes seems to hasten the onset of a fatal issue. The question of excision of an infiltrating glioma will be determined largely by the extent and location of the growth and the surgeon's ability to cope with the added technical problems arising from a block dissection of brain tissue.

It is generally appreciated that successful technic of operation for the average tumor removal depends upon two things: the control of hemorrhage and the management of intracranial tension. Scalp incisions are practically bloodless if made between two lines of finger pressure, followed by the immediate application of hemostats to the galea. Hemorrhage from the bone is adequately controlled by the use of antiseptic wax. With effective control of hemorrhage from the scalp and bone, the two-stage operation is less frequently employed, but the exercise of great judgment

is required in some cases to determine whether an effort should be made to complete the operation at one stage or whether the flap should be returned to its bed and the attack upon the tumor postponed until a second sitting.

The management of intracranial tension during the operation is at times a problem of formidable dimensions. Very high tension is generally, though not always, due to obstruction of the ventricles, and in such cases the difficulties may be met by ventricular puncture through a small nick in the dura. The cases with high pressure, in which fluid cannot be removed from the ventricles, present most serious pressure difficulties, and great care is necessary to prevent injury of the cerebral cortex after incision of the dura. At this stage we have used spinal puncture with intravenous administration of thirty per cent. sodium chloride solution.

Subtemporal decompression was formerly the main procedure in surgery of brain tumors. While giving way to more radical operations it is not likely that its usefulness in dealing with the pressure effects of certain unlocalizable tumors will be lost sight of. Attention has been called to the fact that the protection of vision by subtemporal decompression results in many cases from the employment of the operation to reduce a choked disc arising from some form of self-limited compression not due to tumor. Naturally, if a tumor is accessible, effort should be made to attack it directly, but if it cannot be localized the patient should not be allowed to become blind from the atrophy following choked disc, or to suffer the terrific headaches of compression, simply because the ideal treatment of extirpation is not possible. All of us have seen great benefit from a properly conducted subtemporal or suboccipital decompression, in unlocalizable or inacessible tumors.

The technic of subtemporal decompression even at the present time varies widely in the hands of different operators and its possible effectiveness is sometimes offset by the commission of major errors in its performance. The vertical incision of Cushing, which has so many advantages, has not entirely superseded the old curved incision which is seen rather frequently at the present time. Time and again attention has been called to the importance of making a low bone defect just above the base of the skull rather than a high one which exposes the motor area. The inadequacy of a small bone opening has been repeatedly emphasized, and the impossibility of relieving pressure, by removing bone without opening the dura, is a fact well-known but sometimes disregarded.

During the operation of subtemporal decompression one may ascertain whether or not the homolateral ventricle is distended, and information of considerable value may thus be obtained. When there is high pressure, the operation may be difficult if one is to avoid contusion of the cerebral cortex which often plugs the dural opening with considerable force. It is important that all bleeding from the scalp, bone and meninges be carefully controlled before the dura is opened and the arrangements should be completed for immediate closure of the muscles after wide incision of the dura. In some traumatic head cases where there is a generous layer of subdural fluid, the likelihood of danger to the cortex is slight and with the escape of fluid the brain recedes from the dural opening, but a dry brain is generally found in tumor when the stage of general pressure is reached, so that the tension must usually be relieved during operation, either by ventricular or spinal puncture.

It is highly desirable that intracranial bleeding from every source be carefully controlled before the wound is closed, so that, if possible, drainage may be dispensed with. In osteoplastic flap operations, we occasionally place one or two extradural drains of rubber tissue, and we have seen no objections to this practice. The closure of the incision in layers is a matter of considerable importance if the flap is to be made secure against the postoperative swelling of the brain tissues. Fine silk seems to be generally preferred as a suture material in cranial operations.

The administration of the anesthetic to patients whose respiratory mechanism is already embarrassed is an important factor in the success of operations for brain tumor. There is a growing tendency to avoid the increase of tension due to ether. Some surgeons, notably Dowman, of Atlanta, employ local anesthesia in a large percentage of operations both for tumor and other intracranial lesions. The experienced anesthetist is able to give a smooth anesthesia even for long tumor operations, and

use only a small amount of ether. By infiltrating the line of incision with novocain and adrenalin the general anesthetic may be dispensed with entirely when the scalp is being sutured, otherwise, a deeper anesthesia by ether must be used at this stage of the operation.

There has been a decided lowering of mortality in operations for brain tumor within the past ten years by efficient teamwork both in diagnosis and surgical treatment, and it is possible to keep the mortality figures of brain tumor operations within the limits usually set for those of serious operations elsewhere.

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DISCUSSION.

DR. CHAS. M. HAZEN, Richmond: Referring to the X-ray localization of these tumors, it is, of course, based on the charts Dr. Tucker has shown you, and the important thing is to get such projections as will give the exact locality.

In the radiograms which are being passed to you (Case referred by Dr. Tucker), the anterior-posterior view shows a shadow to one side of the median line, and the lateral view places it just posterior to the coronal suture.

Such findings are of value when they coincide with the neurological examination and history. I have here Dr. Tucker's notes on this case: The child is eight years old, attends schools; parents and his one brother are living and well, family history good. He was a full-term baby, teethed and talked normally. It is possible that there was some trauma at birth as the delivery was very rapid, though not instrumental; the result, a bloodclot. There is a history of "attacks," or "weak spells," in which he gets dizzy and somethiing passes before his eyes, he falls, but is not unconscious; they never last more than five minutes and vary from two in a day to one in two weeks. The most important of these was at one year old, when he had a severe convulsion leaving the right side paralyzed for six hours, then another convulsion with return of function. At present his spells are accompanied by headaches in both temples; the right leg gets numb before the attacks come on.

Thus the history of symptoms in right leg agrees with the X-ray localization of a tumor involving the cerebral center for the right leg.

Operation has been recommended in this case, but the parents have not consented.

DR. B. R. TUCKER: It has become apparent that the diagnosis of brain tumor is not a one man job. You have to get a great deal of help. Another thing is that it is not a one day job. It takes about a week to thoroughly go into a brain tumor case, and I wish also to stress again the comparative frequency of brain tumor and how few of them are really sent in with a diagnosis of brain tumor. I get brain tumors with all sorts of diagnoses; the last one was hysteria. It is very important for a man in any line of work to always be on the lookout for signs of increased intracranial pressure, or signs of infiltrating growth, cases that are getting gradual paralysis, or some other physical change by which you may suspect brain tumor.

Much of this work has developed in the last fifteen years, and it is only in the last three or four years that we can say that brain tumor surgery is at all encouraging. I can say though, that in the last fifteen or twenty cases, the results have been distinctly encouraging in that, whereas the mortality is great, a great many of them have been helped, their lives prolonged, and we have some absolute and complete cures, men who are back at work and performing their ordinary lives with absolutely no discomfort. So it is well worth while not to feel hopeless about brain tumors, and to go into them thoroughly.

DR. EMORY HILL, Richmond: In regard to unilateral choked disc, I think I was misunderstood. I stated that it had been said that a chocked disc on one side pointed to a tumor on that side. I do not think it does at all; my understanding is that there is no unilateral character to it at all. It is a thing that happens from general increase in intracranial pressure. I think it would be a great mistake to assume a unilateral choked disc would mean anything whatever as to the side on which the tumor is located.

DR. C. C. COLEMAN, Richmond: It is true that operations for brain tumor often fail to cure the patient. This is likewise true of tumors in other regions of the body. The effects of brain tumor are mechanical and mechanical treatment of the condition is required.

The scope of surgery in the treatment of brain tumor has been rapidly widened, and we may reasonably expect a further extension of surgical treatment to regions of the brain now practically inaccessible. The profession, generally, is beginning to appreciate the fact that the primary mortality of brain tumor operations is not excessively high. If, however, tumors are not removed completely, and in a majority of cases at the present time it is impossible to make a radical removal, then the patient will likely die eventually from brain tumor. On the other hand, we must not lose sight of the palliative benefits of many incomplete operations. This is notably true of cerebellopontine angle tumors where, with an intracapsular removal done reasonably early, the patient is often able to return to his occupation for a number of years.

The early recognition of infiltrating brain tumors, such as glioma, will lead to radical excision with great improvement in the ultimate results. We believe the following points should be emphasized: 1. Careful examination including competent study of the eyegrounds in all patients who complain of headache or other symptoms of brain disturbance. 2. Appreciation of the fact that brain tumor and not gumma is likely to be present when the patient has symptoms of a space-restricting brain lesion. 3. The substitution of a radical exploration based upon careful study and precise diagnosis, rather than a primary subtemporal decompression, unless localization of the tumor is impossible and the patient has not obstructive hydrocephalus.

THE DIFFICULTIES ENCOUNTERED IN THE DIAGNOSIS OF TUBERCULOSIS IN CHILDREN.*

By R. C. CARNAL, M. D., Rochester, N. Y.

The U. S. Bureau of Education in 1912 reported 1,000,000 children under ten years of

*Read at the fifty-third annual meeting of the Medical Society of Virginia, in Norfolk, October 31—November 3, 1922.

age with tuberculosis and 15,000,000 who needed medical attention for physical defects. How many of these children are under your supervision? Are they diagnosed as tuberculosis, bronchitis, or simply bad colds? Early diagnosis means cure, postponed diagnosis, invalidism.

Every doctor has a method of examination, but it is essential to have a routine form of examination as the detection of slight differences is most important.

ROUTINE METHOD OF EXAMINATION FOR TUBERCULOSIS.

1. History { Family / Present / Past }
2. Physical examination
   - (a) Inspection { Nose / Ear } Throat { Teeth / Tonsils / Larynx }
     Chest { Nourishment / Shape / Motion }
   - (b) Percussion
   - (c) Auscult. Cough { Location of physical signs / Character of rales }
3. Laboratory Findings
4. Diagnosis
   - Advanced Cases { Bronchiectasis / Asthma / Chronic Pneumonia / Pulmonary Abscess }
5. X-Ray Findings
   - Children { Early tuberculosis / Focal Infection }

There are many conditions in children, both tuberculous and conditions caused by focal infection, which render the diagnoisis even of advanced cases so difficult that we are compelled to use all facts pertaining to the case that we can obtain. A complete and careful history should be procured. Inquire into the home surroundings and environment. The condition of father, mother, brothers and sisters should be noted, especially if tuberculous.

PAST HISTORY.—History of frequent colds, childhood diseases, severe illness, nervousness, nature and amount of food consumed daily.

PRESENT HISTORY.—History of lassitude, variable appetite, colds, cough, occasional afternoon temperature, if child tires more easily than normal. Cough with expectoration, night sweats, loss of weight or, in child, failure to gain weight.

INSPECTION.—Inspection of the mouth; condition of the teeth and gums. Adenoid tissues, enlarged or infected tonsils may cause constitutional symptoms. Examination of the nose frequently demonstrates enlargement of the turbinates; deflection of the septum or presence of polypi, which obstruct the air passages. Discharging ears should have special attention. A smear from a discharging ear will often show the presence of tubercle bacilli.

EXAMINATION.—The child should be stripped to the waist. The chest thoroughly inspected as to the nourishment of muscles. The round rotund chest is the ideal shape, but the shape is not so important as we find tuberclosis in all shapes of chests. Look for cervical glands, scars and sinuses.

LAGGING.—Lagging is best detected by palpation and inspection. Seldom present in tuberculosis in children.

AUSCULTATION.—Usually no signs in the chest; D'Espine sign not important, because not verified by X-ray plate. The cough after expiration is essential and should be a part of the routine examination in every case, rales heard at end of inspiration if present. The aucultatory findings do not help us much in the diagnosis of early tuberculosis in children.

LABORATORY FINDINGS.—Usually no sputum is found. In cases with negative sputum we may sometimes demonstrate bacilli by injecting into a guinea pig. Guinea pig inoculations are also useful in demonstrating bacilli in urine, and discharge from ears. A smear from the larynx is valuable and should be a part of the routine examination. In a few cases the bacilli have been found by this procedure. An examination of the urine will help us in ruling out pyelitis, nephritis, etc.

DIAGNOSIS.—Rule out focal infection, such as infected tonsils, diseased teeth, pyelitis, mitral stenosis, and other heart lesions. Make due allowances for any severe illness from which the child may be recovering. A tuberculin test should be made on each case; if positive, there appears a local reaction which persists for several days.

PULMONARY TUBERCULOSIS.—In pulmonary

tuberculosis symptoms are important as occasional rales at apex or around nipple. X-ray shows increased lineal markings with beading of ascending branches, such as we find in the following two cases:

Case 1. Girl 8 years old. Mother, positive sputum.

Physical Signs.—Poor breathing, apex to base. Few fine rales under left nipple. Otherwise negative.

X-ray Right.—Slight infiltration outward from hilus.

X-ray Left.—Slight infiltration upper half. Beading shows especially under left clavicle.

Schick negative. O. T. Positive. Wassermann and urine negative.

Case 2. Girl 12 years old. Mother, negative. Brother died of tuberculosis.

Physical Signs.—Poor breathing clavicle to 6th rib right and left. Posterior—poor breathing from L. V. S. to bases.

X-ray Right.—Slight beading just above and below hilus.

X-ray Left.—Hilum shadow increased; slight beading just around hilus. Beading under both clavicles.

Schick negative. Positive O. T. Wassermann and urine negative.

Pleurisy With Effusion.—We get distant or absent respiration; flatness. X-ray shows shadows at base, usually with upper surface a curve extending outward and upward toward axilla.

Case 3. Boy age 13. Mother, negative. No history of tuberculosis.

Physical Signs.—Anterior Right: No signs. Left: Rales 3 R. B. to base, also distant breath sounds.

Posterior Right: No signs. Left: Distant breath sounds, and a few rales 4 V. S.-base.

Schick negative. O. T. negative, Wassermann and urine negative.

X-ray.—Dense shadow at base, upper surface a curve extending outward and upward toward axilla.

Lung Abscess.—History of acute illness, especially if operation on nose or throat. X-ray shows dense shadow, usually toward base; only one lung affected and later we may get rarefied area on centre of this shadow, due to formation of cavity. Good illustration by this case:

Case 4. Boy. age 13. Mother negative.

Physical Signs.—Anterior Right: No signs. Left: Few rales in mammary region; harsh breath sounds at 4th rib—W. V. 4-6. Dullness 4-5.

Posterior Right: Dullness apex to 5th rib. Left: No signs.

X-ray Right.—Slight peribronchial infiltration upward from hilus.

X-ray Left.—Slight peribronchial infiltration upward from hilus; hazy shadow middle one-third.

Schick negative. Positive O. T. Wassermann and urine negative.

Bronchiectasis.—Bronchiectasis is also to be differentiated; here the history is of greatest value. No marked constitutional symptoms. Discharge of large amount of foul fetid sputum; at intervals less expectoration. In tuberculosis such large amounts of sputum would usually show bacilli. Bronchiectasis usually affects the bases of both lungs with apices clear on X-ray plate.

Case 5. Boy 5 years old. Mother, negative.

Physical Signs.—Rales mostly bronchial in character, both bases.

X-ray Right: Increased lineal markings extending upward from hilus.

X-ray Left: Same.

Schick negative. Positive O. T. Wassermann and urine negative.

Hilus Tuberculosis.—No signs in chest. We have the symptoms; history; tuberculin test and X-ray to aid us in making the diagnosis of early tuberculosis, but there is no infallible test or group of symptoms on which we can make a positive diagnosis, and often the diagnosis is made by exclusions. The difficulties in making an early diagnosis are numerous. If we can diagnose our cases early, we can cure them, but this is not accepted as the truth by the laymen and many physicians. The parents fight against learning the truth and the doctor hesitates to tell them; which means our curable case will soon be a far advanced one—another life sacrificed. After we have excluded all possibilities of focal infection, heart, kidney, malaria, etc., what else is left to be done except diagnose the case as tuberculosis?

Asthma.—In asthma we get many sibilant and large moist rales in both lungs on quiet respiration and after cough. If it gives rise to diagnostic differences, it will be necessary to wait for a time when asthmatic symptoms

are absent. Heart lesions, which cause congestion of the lungs, especially mitral-stenosis, are at times diagnosed as tuberculosis, but a careful study of our cases should rule out this error.

Conclusions.—A positive diagnosis can be made on one examination, but a negative diagnosis cannot. It is advisable to re-examine all suspicious children, especially those who are under-nourished and who have slight cough and lassitude. Physicians without X-ray machines and laboratories should make tenative diagnosis on symptoms; then watch these children and re-examine from time to time to make sure they are not missing cases with tuberculosis.

Monroe County Tuberculosis Sanatorium.

PNEUMONOCONIOSIS: REPORTS OF CASES.*

By ALFRED L. GRAY, M. D.
and
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Richmond, Va.

This subject has been suggested to the writers by the recent occurrence in their laboratories of two cases of exceptional interest, both from the standpoint of diagnosis and especially from that of the etiology.

By way of recalling the subject to your minds: Pneumonoconiosis, also abbreviated into pneumoconiosis, is the deposit of inhaled foreign material in the lymph nodes and tissues of the lungs and some other organs. According to the nature of the material inhaled, it is of several common varieties: viz., *Anthracosis* from coal dust, *Siderosis* from iron grindings, *Chalicosis* from pottery dust, and *Silicosis* from stone dust.

One of our cases belongs to the anthracosis variety while the other belongs strictly to none of them, but more nearly simulates siderosis than it does the others, both in the nature of the causative material and also in the roentgen picture.

This subject has been dealt with by Dr. D. C. Jarvis in a most interesting report of his roentgenologic and pathologic investigations made on the chests of granite workers of Barre, Vermont, which was published in the *American Journal of Roentgenology*, April, 1922. Extensive studies of pneumonoconiosis have also been carried on by Dr. H. K. Pancoast, of Philadelphia, who studied the chests of workers engaged in various industrial pursuits attended with dust production.

These and other students of the subject are agreed that the appearances shown on the roentgen plate are rather the result of the reaction of the tissues to the presence of the foreign irritating material than to the actual accumulations of the dust particles except that in cases of materials opaque to the roentgen rays the small collections of dust may also appear as dense white spots distributed more or less generally throughout the lung.

Pathological examination reveals the presence of these particles, chiefly in the lymph nodes accompanying the bronchial branches and, as one would suppose, more abundant in the lower portions of the lungs than in the upper, and more abundant in the right than in the left. As a result of the irritating effect of these minute particles when inhaled in large quantities for a considerable length of time, there ensues a fibrosis and thickening of the bronchial and peribronchial tissues. Often these so strongly simulate the lesions produced by influenza, tuberculosis, and various other bronchial and pulmonary affections that differentiation is extremely difficult, if not impossible, when the appearances of the shadows of the lesions are considered without reference to their distribution or the clinical condition and history of the patient.

The distinguishing characteristics whereby one may in most cases correctly diagnose pneumonoconiosis are:

1. The more general distribution of the lesions throughout the lung.

2. Their similarity to each other in shape, density, and general appearance.

3. Their existence in greater numbers in the lower portions of the lungs, especially the right.

4. The absence of clinical history indicative of infection.

5. The absence from the sputa of characteristic bacteria.

6. The rapid disappearance of many of the roentgenographic appearances when the individual is removed for a short period from exposure to the dust inhalations.

The case reports are as follows:

1. *Name*: Mrs. J. B. Age 50. White.

*Read at the fifty-third anual meeting of the Medical Society of Virginia in Norfolk, October 31-November 3, 1922.

Widow. Referred by Dr. G. Paul LaRoque, of Richmond, Va.

Present occupation: Worker in printing establishment.

Chief Complaint: Patient received injury about the chest when a wall of the building in which she was working caved in.

Past History: Patient states that her general health has been good; she does not remember any serious sickness; she has never spit blood nor had other symptoms of tuberculosis.

Her occupations have been as follows: She was a housewife up to the death of her husband, which occurred about three and one-half years ago. She then went to work with a cigarette manufacturing concern and was with them for approximately five months. Her chief duty consisted in handling the packages of cigarettes. The brand of cigarettes handled had much bronze printing on the packages. She then accepted her present position, which is with a large printing firm. This firm prints the packages for the same brand of cigarettes that she handled while at her previous position. The bronze is in a liquid form and some of this is frequently spilled on the floor during handling. This quickly dries, leaving very fine bronze dust. Patient states that after her day's work she can taste the bronze and the sputum has a brownish color. She often washes her mouth and nose to get rid of the dust. She has worked at this place for three years, the usual day being from 7:30 A. M. to 6:00 P. M. She considers her general health good.

X-ray examination: No fractured ribs found. Small dense deposits approximately 2 mm. in diameter are seen scattered in the lungs from the apex to the diaphragm on both sides. The deposits are more numerous in the bases. The condition is probably a pneumonoconiosis.

2. *Name*: S. A. L. Male. Age 35. Married. Nationality: Lithuanian. Referred by Dr. C. B. Crute. Farmville, Va.

Present Occupation: Tailor.

Chief Complaint: Patient has general weakness, nervousness, and a choking sensation on swallowing. He has become alarmed about his condition and imagines he has cancer of the stomach. He has worried a great deal about his condition for the last two months and during this time has lost ten pounds in weight.

Complete examination by his physician, who is experienced in the diagnosis of pulmonary tuberculosis, fails to show signs of this disease. His past history is negative except for an appendectomy twelve years ago, dysentery two years ago, and a mild attack of influenza one year ago. There is no family history of tuberculosis. His previous occupations have been as follows: At the age of eight he came to the United States to live with a brother in Pittsylvania County, Va. From the age of twelve until seventeen he took up tailoring which he has continued until the present time. From eighteen years of age, however, until the age of twenty-four he found very little work at that trade from the month of July until October each year and found employment in the coal mines during the day and would do the tailoring during the night hours. Thus. for four months each year for a period of six years, he was engaged in coal mining. Two years were spent in the U. S. Army as an instrument repairer in the Aviation Corps.

Roentgen Ray findings: Examination of the gastro-intestinal tract reveals adhesions involving the cecum and ascending colon. Plate of chest shows the entire bronchial trees on both sides studded with fine discrete areas of consolidation resembling tubercles, some of which are calcified and many still soft. In view of the general distribution of the consolidated areas, their similarity, their presence in the lower portion of the lungs in greater numbers than in the upper portions, the greater number being on the right side, and especially the absence of clinical evidence of tuberculosis and his occupational history, the diagnosis of pneumonoconiosis of the anthracosis variety is made.

206 *Professional Building.*

DISCUSSION.

DR. R. C. CARNAL, Rochester, N. Y.: This paper is very interesting. In the cases that have come under my observation I find the physical signs similar to tuberculosis, with history of cough, dyspnea, streaked sputum and in some cases hemorrhage and negative sputum. History shows several years' occupation in granite industry.

Diagnosis was made from history, negative sputum and no loss of weight.

I should like to ask Dr. Gray how he differentiated the roentgen-ray film of pneumonoconiosis from tuberculosis.

DR. D. M. MOORE, Stonega: Dr. Gray's paper was very interesting to me from the standpoint of a man from the coal field. The question in our minds in regard to these men is the effect that this coal

dust has on the tuberculous patient. It has been impressed on me in my observation for some time, especially along this line, that we rarely run across a case of tuberculosis in a coal miner. A co-worker with me is making a special study along this line and I would like to ask Dr. Gray what effect coal dust has in the way of protecting a man against the infection with tuberculosis, if there is any. In placing men in these mines, it is our work to look after them, examine them, and see whether or not they are suitable for coal miners. If we get a case of mild tuberculosis it is a question with us whether to send that man into the mine or put him into some work outside. We do not know just yet whether it will set up his tuberculosis, or whether the coal dust will have some preventive or beneficial effect upon his original infection. Personally, I have not seen a death from tuberculosis in a coal miner in the past five years.

Dr. J. H. Hiden, Pungoteague: There are one or two questions I would like to ask. While we are discussing the subject of lung trouble, has anyone heard of any method of treatment by the use of calcium for tuberculosis? In a recent work the author mentioned that people who live in certain sections where there is a good deal of working in calcium were not subject so much to tuberculosis. I would like to know if that is true. I do not know whether it is true or not, or whether it has been thoroughly investigated, but the authority I have referred to seemed to think that the use of calcium in tuberculosis would be very beneficial; that the subject ought to be investigated, but he did not go into the subject much further than that.

In regard to children, of course, that is getting a little off the subject and going back to the preceding discussion. I think that we ought to consider the fact that in a great many of these lung troubles we have a number of factors that enter into ill health, and we ought to try very carefully to eliminate all factors other than that of tuberculosis, in any given case, before we attempt to make any diagnosis.

Dr. E. C. Harper, Catawba Sanatorium: There seems to be considerable difference of opinion among authorities as to whether the occupation of coal mining gives any protection. Dr. Edwards reports in a paper here at this meeting that he has found very little clinical tuberculosis among coal miners. Several noted authorities take the opposite side, that working in a coal mine predisposes an individual to tuberculosis rather than protects him. We have had several coal miners as patients at Catawba but I do not recall any that showed signs of anthracosis on X-ray examination.

I had a very interesting case under my observation recently, an attendant at the Catawba Sanatorium, who had previously worked in a coal mine. One day while at work he had a hemorrhage of one ounce. He was put to bed immediately and on the following day examination revealed what we thought was a case of miliary tuberculosis. His chest throughout was full of large moist rales, and he also showed dullness on percussion throughout the chest. He had no symptoms except a severe pain in the right side. In a few days the man returned to work, but looked sick. X-ray examination showed this man to be suffering with apparent consolidation throughout both lungs. We referred the plates to an expert and he pronounced it coal miners' disease. Repeated sputum examinations on this man have not shown any tubercle bacilli. The suptum, as far as you can see, contains no coal dust, but miscroscopic examination shows carbon deposits throughout. The man at the present time is going ahead with his work. He has practically no symptoms, is apparently not suffering from this condition. The physical findings have cleared up, there are a few rales at the base, but otherwise the lungs are normal on physical examination.

Dr. A. L. Gray: Answering Dr. Carnal, I tried to bring out in my paper that the differential points between the diagnosis of tuberculosis and pneumonoconiosis are, first, the more general distribution throughout the lungs; second, the fact that they are nearly all the same size; third, that they occur chiefly in the lower lobes rather than the upper; fourth, that there is entire absence of any characteristic bacteria, either tubercle bacilli or bacilli of other pulmonary infection; that here is an absence of clinical findings, and especially the history of the patient's occupation. Now I do not believe that in that last plate I showed it is possible at all to make a diagnosis definitely between a general disseminated tuberculous condition and pneumonoconiosis. I reported that the condition looked like tuberculosis, and asked particularly whether or not this patient had any clinical evidence of tuberculosis, whether he was running a temperature, etc. At first I had no history of any coal mining occupation at all; he gave me his occupation as a tailor. There was nothing in that, that I could see to cause his trouble. I reported to the doctor it was one of two things, and after he told me of the occupation, and considering the distribution, we concluded quite positively that it was pneumonoconiosis rather than tuberculosis.

In regard to Dr. Moore's question about coal miners. Dr. D. C. Jarvis has made a most exhaustive study of this subject among granite workers, and of course other occupations have been included in the studies of others. The Tuberculosis Commission reports about eighty per cent. of the deaths of the granite miners, Italians I think they were, as due to tuberculosis. I do not know what the statistics are in regard to coal miners. It seems that Italians are especially susceptible to diminished resistance produced by this occupational pneumonoconiosis. I can not believe that coal dust has any beneficial effect. What Dr. Jarvis recommends is that they select a man, put him to work for a little while and see what his lungs show, then stop it and see what reaction he gets, and determine in that way whether or not he is a suitable man.

REPORT OF A CASE OF TYPHOID FEVER, WITH PERFORATION, ALSO SOME GENERAL OBSERVATIONS ON TYPHOID PERFORATION.*

By R. M. WILEY, M. D., Salem, Va.

I wish to report a case of perforation of the bowel, complicating typhoid fever, in a boy 12 years of age. My story would have greatly enhanced interest, at least, to me, had the patient recovered, but alas, as a great majority of these cases do, he succumbed on the third day following an operation, although his improvement was so marked for two days following the surgical procedure, that the sur-

*Read by title at the fifty-third annual meeting of the Medical Society of Virginia in Norfolk, October 31-November 3, 1922.

geon and myself both thought his chances for recovery good. As regards this, I will speak more fully, in detail, later on.

I wish not only to report this case, but to speak generally on the subject of "Perforation of the Bowel," because it is the most serious of all the complications of typhoid fever that are commonly met with and, contrary to the popular impression, amongst the profession, has no relation to the severity of the general symptoms, for it occurs as often in mild as in severe cases.

Although I may not have any new or helpful ideas, or be able to shed any new light upon this most important subject, yet I wish to discuss it most earnestly with you, for it is vitally important, because, upon the prompt diagnosis of this condition and the immediate action of the attending physician, hangs the life of his patient, for statistics clearly prove that the prospect of recovery from perforation treated by operation steadily diminishes with each hour that passes after the accident occurs. Consequently, the important thing for us, in the consideration of this dire disaster, is the ability to promptly recognize the condition and act without loss of time.

Now as regards diagnosis: the typical cases are fairly easy to recognize for, when perforation occurs, the symptoms are apt to be ushered in by agonizing pain in the abdomen, usually felt in the appendicular region. The abdominal wall is sensitive to palpation, quickly becomes tense and tympanitic and all the symptoms of a general, diffuse peritonitis may speedily ensue, the pulse becomes rapid and running and collapse may quickly assert itself.

Of course, as you know, in the typical cases these symptoms are preceded by a fall of temperature to normal or sub-normal. In this connection, it is quite important to note that a sudden fall in temperature is not a symptom necessary to the diagnosis of intestinal perforation. On the contrary, there are many cases on record in which a rise of temperature has followed this accident.

The diagnosis of perforation is to be reached by the following signs in addition to those just given. The examining hand, when lightly placed upon the abdominal wall, not only brings out the fact that it is hypersensitive, but that its muscles are unduly tense.

There are several conditions causing pain, which must be carefully excluded before the physician can arrive at the diagnosis of perforation, even if the symptoms and signs just described are present. These are, pneumonia of the bases, diaphragmatic pleurisy, iliac thrombosis, appendicitis and intestinal obstruction. Furthermore, peritonitis may develop from the extension of the inflammatory process in the bowel, or, by reason of the migration of micro-organisms, through those parts of the bowel wall, which have been impaired by the ulcerative process. In such cases, the pain and swelling and diaphragmatic paralysis, may all be present, without being due to perforation; and so closely may the symptoms of perforation be simulated, that operation has been performed, with the discovery that no perforation had occurred.

In July, 1917, I had a case of this sort, in which the diagnosis of perforation was concurred in, not only by the consulting general practitioner, but also by the consulting surgeon. Operation was performed, no perforation found, but, most happily, the patient recovered, thus saving us from a very embarrassing situation.

In some cases, the onset of the perforation is insidious and more difficult to recognize than the typical case just described. Such was the fact in the case of the boy, aged 12, which I will now report.

I was called to see B. F. W. August 26th, 1919, at 3 P. M., and was given the history of the boy's having been feeling ill since August 22nd. Temperature at first visit, 104, spleen enlarged.

From the history and findings, a presumptive diagnosis of typhoid fever was made, which was later confirmed by the clinical course of the disease and a positive widal reaction. Temperature ranged in the evenings from 103-104 and over, for fully four weeks, despite the usual methods of treatment. Occasionally, it went as high as 105; although temperature after the fourth week, declined to between 102 and 103, in the afternoon and evenings, yet it continued to persist without any complications, although I was on the lookout and suspicious of some complication on account of the long and unusual duration of the fever.

During the whole course of the disease, that is, until just before the fatal termination, the

boy maintained a clean moist tongue and never showed any delirium. Other than the high temperature of the first four weeks, and the unusual duration of the fever, which was now beginning its eighth week, there had been no alarming developments until the forenoon of October 7th, when I found, upon my daily visit, that his temperature of 102-1/5 of the preceding evening had dropped to normal that morning. His pulse, instead of decreasing in frequency, had become more rapid, but was not running nor alarming. There was no collapse, and his facial expression was good and natural and was in no sense the typical Hippocratic countenance. He had complained of but little, if any, pain in the belly, but I found, upon palpation of the abdomen, that pressure produced distinct pain, and there was considerable distention, though not very exaggerated.

So you see, that this was a case that belonged to the insidious class of development and was not a typicaal onset, and one might easily be beguiled into thinking it was not a perforation but a condition due to gaseous distention. I am glad to say, however, that I was not so deceived.

Another thing worth mentioning is that in this case muscular rigidity was not marked, as is practically always the case in perforation. I immediately concluded that perforation had occurred, basing my opinion upon the sudden drop of temperature, increased distention of abdomen, with pain and increased pulse rate. I reasoned that, if the so-called crisis had come, with its consequent return of normal temperature, there should be no increase of tympanites, nor should there be abdominal pain, nor increased pulse rate, all of which conditions existed here.

I immediately informed the boy's father, of my opinion and urged that I be permitted to take the boy, at once, to a hospital for operation, explaining that that was his only hope and that each hour of delay added to the danger. Despite my most urgent entreaties, he positively declined, averring that he knew that would kill him. He then requested that I call a certain physician in consultation, which I did promptly, and this consultant, perhaps noting the good facial expression of the boy and absence of signs of collapse, stated as his opinion that no perforation had occurred and no operation was necessary. I still maintained my firm belief and stand that perforation had occurred.

In the afternoon of the same day, the father wished another consultation, this time selecting another physician, who came, examined the patient, consulted with me, and stated, in his opinion, that no perforation had occurred and no operation was necessary.

I still held out that a perforation had occurred and an operation was necessary, but, of course, under the condition of dissenting opinion, it was not done that day. On the forenoon of the following day, the boy's belly was more distended, and pulse had jumped from 120 to 140, and there was a return of fever, to ninety-nine and a fraction.

By most insistent pleadings, I got the father's consent to remove the boy to a hospital in Roanoke, and, since there was a fatal termination in this case, I will show the same kind consideration that the Roanoke papers do, under like circumstances, and simply say that the patient was removed to a local hospital, for operation. So he was promptly transported, very carefully in an ambulance, to this hospital, where he was operated upon, October 8th. A perforation about 1/8 inch in diameter was found in the ileum, together with a general diffuse septic peritonitis.

I will mention that just before operation, leucocyte count was 4800. At the time of admission to hospital, pulse was very weak and could not, at times, be counted accurately; respiration was rapid, runing to 40 and over.

October 9th, after operation, patient's condition had improved very markedly, pulse could be easily counted and ranged from 120 to 140, and was of fairly good volume, abdominal distention had decidedly lessened, and respiration had improved greatly, ranging from 18 to 20 per minute, and patient, according to nurse's chart, had a very comfortable day.

Friday, October 10th, patient's condition had continued to improve, so much so that pulse, on this date, ranged only from 100 to 120 and all the other symptoms were also improved by the same ratio. We had now begun to be really very hopeful of recovery.

On Saturday morning, October 11th, the third day after operation, our patient suddenly "went to pieces," abdominal distention returned, pulse became running and rapid, res-

piration hurried, vomiting set in, patient's features became pinched, eyes sunken, the characteristic Hippocratic countenance ensuing, and the little fellow "went out" at 3:30 P. M., and a prompt diagnosis, and also an excellent piece of work by the operating surgeon, went for naught.

It is foolish and futile to speculate on what might have been, but Oh, how I wish this case could have been operated upon promptly, the day the perforation occurred!

SPLENECTOMY IN THE TREATMENT OF SPLENIC ANEMIA.*

By EDMUND J. HORGAN, M. D., F. A. C. S., Washington, D. C.

Splenic anemia was first described by Gretsel in reporting a case from the clinic of Professor Griesinger who had recognized lymphatic anemia and splenic anemia, and who used these names in his clinical dissertations to distinguish them from a large group of pseudoleukemias, so-called. Banti, by collating the pathological studies of Lodi, Concato, and Franzolini, and the clinical studies of Griesinger and Gretsel, and by his clinical observations and necropsy studies on three cases, further separated this disease from a large group of splenomegalies. By his description of a disease which has been given his name, Banti stimulated investigation of diseases of the spleen and particularly of splenic anemia. The term splenic anemia originally included a group of diseases characterized by certain well-known clinical features of unknown etiology, but later, more accurate investigations have brought out finer pathological and etiological discriminations, and from the group called splenic anemia by Griesinger and described by Gretsel and Banti, we have removed Gaucher's disease, haemolytic jaundice, von Jaksch's disease, tuberculosis of the spleen, luetic and malarial splenomegalies, and thrombophlebitis of the portal and splenic veins. As many splenomegalies with anemia have been removed from the group of diseases formerly classified under splenic anemia by having their etiology determined, it is probable that further studies will remove other splenomegalies from our present group.

Banti described splenic anemia as "a disease characterized by a gradual, progressive oligemia of unknown cause, which gives place to marked disturbances of all the organic functions, to edema, hemorrhage, intermittent fever; followed almost always by death; accompanied by a conspicuous tumefaction of the spleen and very often of the liver, the tumefaction independent of any previous morbid state and not accompanied by leukemic changes in the blood. Briefly, splenic anemia is a progressive idiopathic anemia, accompanied by a true idiopathic hypertrophy of the spleen and frequently of the liver, without leukaemia." He divided the progress of the disease into three stages: (1) gradual enlargement of the spleen with secondary anemia; (2) hypertrophy of the liver with diminution in the amount of urine; and (3) reduction in the size of the liver, and ascites.

Banti outlined the prominent symptoms of a group of splenomegalies accompanied by a secondary anemia and included several splenomegalies not within our present group of splenic anemia. Today we consider splenic anemia to be a progressive disease characterized by chronicity; a gradual hypertrophy of the spleen; a secondary anemia with leukopenia; attacks of epigastric pains; a marked tendency to gastro-intestinal hemorrhages; and, in the late stages of the disease, cirrhosis of the liver, jaundice, and ascites. The etiology of splenic anemia is unknown but it is considered that the disease is primarily in the spleen. It has been considered by Banti and others to be of infectious origin. The onset is insidious, and the disease is not usually recognized until there has been marked damage in the liver, a secondary anemia with leukopenia, and occasionally, gastro-intestinal hemorrhage. These changes are produced by the elaboration of a toxic substance in the spleen which is carried, by the splenic vein, to the liver and other tissues.

The diagnosis is often difficult as some of the prominent symptoms of splenic anemia are found in other diseases which are frequently encountered. In the late stage of the disease the clinical picture is similar to that of cirrhosis of the liver. In primary cirrhosis of the liver with ascites the spleen is enlarged; in splenic anemia, in the second stage, the liver is enlarged, and in the third stage there is cirrhosis of the liver with ascites, making the clinical picture of these two rather similar, so that there may be difficulty in determining

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whether the disease is primarily in the liver or in the spleen. Thrombophlebitis of the portal or splenic vein by the production of abdominal ascites, and splenic enlargement present a picture that is similar to the late stage of splenic anemia. A sudden hemorrhage from the gastro-intestinal tract with a previous history of epigastric pain in splenic anemia may lead the clinician to make an erroneous diagnosis of chronic gastric or duodenal ulcer.

SURGERY.

Zaccarelli, in 1549, and Ferrerius, in 1711, have been accredited, by some authors, with removal of the spleen, but these cases have been discredited by others for lack of sufficient detailed records. The earliest authentic case of splenectomy was reported by Quittenbaum, of Rostock, in 1826. Kuchler of Dermstadt, in 1855, and Spencer Wells of London, in 1866, each reported a case of splenectomy. The patients upon whom these first three operations were performed died a few hours afterwards. Pean, in 1867, did the first successful splenectomy from which the patient recovered. From Collier's table of twenty-nine cases of splenectomy reported from 1549 to 1881, we find a mortality rate of 72.4 per cent. Vanverts' thesis of 1897 records 274 cases with 104 deaths, a mortality rate of 37.9 per cent. Modern surgical methods and proper selection of cases have reduced the mortality in splenectomy from all causes. Giffin, in 1921, reported in a series of 73 splenectomies for splenic anemia 9 deaths, a mortality rate of 12.3 per cent. It is obvious that the most favorable cases for splenectomy are those in which the spleen is only slightly enlarged, and where there has been produced only a moderate degree of secondary anemia, and where there has been little damage done to the liver and other tissues; but sometimes a case which at first appeared to be hopeless has been cured by doing a splenectomy even late in the disease. To illustrate what may be accomplished by splenectomy in splenic anemia, I would like to cite two cases; one, an early case; the other, what appeared to be a terminal case, both having been cured by splenectomy.

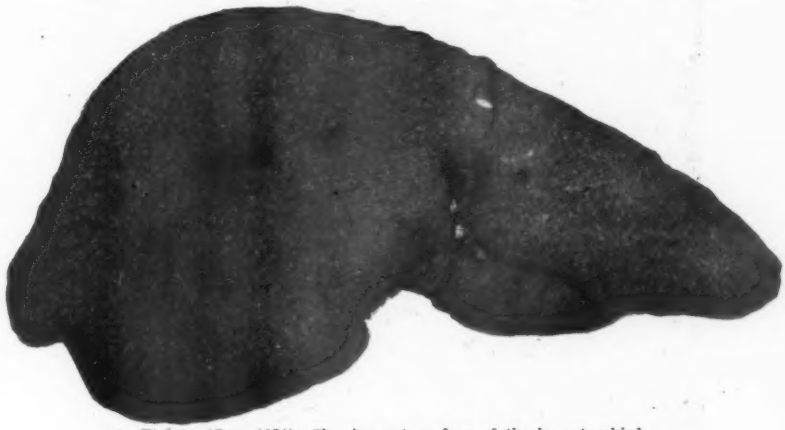

Fig. 1—(Case 1074)—Showing cut surface of the hypertrophied spleen. The small, pearly white spots are the fibrosed germ centers.

CASE 1.—(No. 1074) Mrs. H. N., a housewife, married, age 27, was seen by me in consultation with Dr. L. B. Castell, October 5, 1921, complaining of pain in the epigastrium and lower right quadrant of abdomen, headache, nausea, with burning and distention after eating. Upon examination the spleen was found to be enlarged and presented below the left costal margin. A cytologic study of the blood showed 4,000,000 red cells, 9,600 white cells. The hemoglobin was seventy per cent.

Operation October 6, 1921. Upon exploration of the abdomen the spleen was found to be about six times the normal size. The stomach, duodenum, gall-bladder and ducts did not show evidence of pathological changes. The liver was firm in consistency and the appendix was large, the walls being thickened. The spleen and appendix were removed. The patient has been kept under observation and several blood examinations have been made which have revealed an increase in the red and white

Fig. 2—(Case 1074)—Photomicrograph of section of spleen showing hyalinized fibrosis of the germ center and of the connective tissue stroma about the germ center with diminution of lymphoid cells. Fibrosis is marked throughout.

Fig. 3—(Case 1074)—Photomicrograph showing marked thickening of the capsule with perisplenitis and thickening of trabecula. Marked fibrosis of connective tissue stroma throughout.

cells and a rise in the hemoglobin. When last seen about a month ago the patient was in excellent health.

Case 2.—(No. 1126) Mr. V. B., a real estate broker, single, age 26, was seen in consultation with Drs. Clark and Reeves on January 28, 1922. The patient gave a history of having suffered for 17 years, his illness progressively becoming worse. At the age of 20 he had a gastro-intestinal hemorrhage and another five years later. This last hemorrhage occurred in November 1920. He was seen by a surgeon who made a diagnosis of gastric ulcer for which he did a gastro-enterostomy. January 25, 1921. his abdomen was tapped on account of abdominal ascites, 12 quarts of fluid were

withdrawn. Forty-five subsequent tappings were done. The total amount of fluid removed was 127 gallons. Examination revealed an hypertrophied spleen almost filling the left side of the abdomen. Cytologic study of the blood showed 2,500,000 red cells. and 7,700 white cells. The hemoglobin was 51 per cent. A diagnosis of splenic anemia was made and splenectomy advised.

Operation February 6, 1922. Upon exploration of the abdomen through a left rectus incision a markedly enlarged spleen was encountered and removed. For a few weeks after the operation there was a little fluid in the abdomen. It gradually diminished in quantity and soon discontinued accumulating. The patient gained fifty pounds during the summer, and there has been a steady improvement in the condition of his blood. So interesting is this case, and so gratifying the operative result, that a detailed account will be reported later.

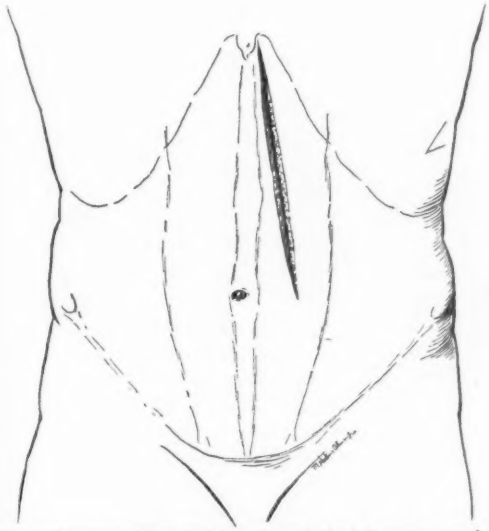

Fig. 4—Showing oblique incision, through the left rectus muscle, used in splenectomy. The incision begins in the notch between the ensiform cartilage and costal margin and extends downward through the left rectus muscle to a point about two inches to the outer side of umbilicus.

Conclusions.

1. Splenic anemia is now conceded to be a surgical disease for which the treatment is splenectomy.

2. The best results are obtained when a splenectomy is done early in the disease, therefore an early recognition is important.

3. Splenectomy performed late in the disease may result in a cure and should be performed if, in the opinion of the surgeon, the physical condition of the patient warrants it.

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Discussion.

Dr. R. L. Payne, Norfolk: I want to call attention to the number of mistakes that have been made by operators who thought they were looking for some form of cirrhosis, and who did some form of operation in the hope of curing the trouble, when really it lay in the spleen. I am quite certain, from the cases that I have seen, that it is the fault of the operator.

I state this as a word of caution that might well be handed out.

Dr. E. J. Horgan, Washington, D. C. (closing): It is seldom that a case of splenic anemia reaches the surgeon before one or two other diagnoses have been made previously for which mistake the patient has been erroneously treated. Occasionally we get a case of splenic anemia for which, due to an error in diagnosis, the patient has been operated upon as in the second case which I am reporting. This patient had an enlarged spleen and had a sudden severe gastro-intestinal hemorrhage with vomiting of blood. The clinician and surgeon who saw him at that time made a diagnosis of gastric ulcer for which a gastro-enterostomy was done; the splenic anemia continued to progress and the patient gradually grew worse. Had the disease been recognized at that time and a splenectomy performed, the possibility of a cure would have been greater than later in the disease after the liver and other tissues were severely damaged. Since Banti's time several splenomegalies have been removed from the original group. In our present group we may be including more than one variety of splenomegaly.

ON THE MANAGEMENT OF UROLOGICAL CASES.

By JOSEPH F. GEISINGER, M. D., Richmond, Va.

In no branch of surgery has progress in recent years been more definite or more secure than in the genito-urinary field where precision of diagnosis and refinement of technique have now in a signal degree eliminated factors of error and contributed factors of safety in procedures often of live-saving dimensions.

Largely as a result of the expert use of the cystoscope, in conjunction with the X-ray, the determination of genito-urinary conditions has been reduced to a striking degree of exactitude, which in the vast majority of instances leaves no excuse for misinterpretation. In a similar measure, close attention to detail, coupled with the skill and dexterity of the specialist, have robbed even the major operations of their worst dangers, so that, except under most unusual circumstances, the actual surgery of this branch is now approached with considerable satisfaction and confidence. Between these two, however,—the diagnosis and the operation —lies what might be called an intermediate zone, immense but poorly recognized in its possibilities. It is the purpose of this paper to call attention to this zone, with the mere intimation that its proper estimation may not infrequently lead to results which might be epitomized as follows:

1. The conversion of a poor into a good surgical risk.
2. The substitution of a procedure of lesser moment for one greater in magnitude and destructiveness.
3. The entire elimination of surgery in certain cases in which it was until then considered essential and even imperative.
4. The conservation of certain processes (notably pregnancy) too frequently interrupted to relieve renal conditions amenable to less drastic control.

In the average hospital in the past, the diagnosis of a renal condition has been synonymous with the prompt application of a surgical remedy, the precise character of which was usually determined by pre-existing formulae. For instance, a renal calculus accompanied by large amounts of pus in the kidney urine and an absence or great diminution of function commonly meant nephrectomy and loss of a valuable organ: recognition of the fact that not infrequently the infection can be eradicated, the function restored, the calculus removed, and the organ saved, is dependent upon painstaking investigation and patient plodding in the intermediate zone, generally ignored. In such an instance no formula should be allowed to guide the surgeon except one specifically elaborated to meet the particular case in question. When such individualization of patients is undertaken, the full significance of the preliminary period of investigation and preparation will begin to be apparent; for a half-dozen cases of the same general type, varying associated and allied conditions, may necessitate a half-dozen different preliminary steps which will in turn completely alter the aspect of the ultimate procedure in a certain percentage of the number. This is particularly true of renal infections, with or without related pathology.

It is singular for instance that the lesson taught by the preliminary stage of prostatic surgery has not been more generally applied to the urinary tract at higher levels. Today it is probably generally admitted that the actual enucleation of the gland is the least important of the steps in the cure of an individual with a hypertrophied prostate; of vastly more significance are the pre-operative and post-operative periods. When the lesion is transferred to the level of the kidney, however, the operation has again resumed command of the situation and is frequently undertaken without any regard whatsoever to any other consideration. This attitude is as irrational as it is widespread. It is by no means claimed that in all cases preliminary conservative treatment will materially alter the course of events; but in many cases it will do so: and in a few will bring these events to a complete termination short of surgery of any description. Very gradually an appreciation of these facts is beginning to appear in the profession and it is hoped that the future will see a development of this field to the extent it deserves. The specialist in urology is already alive to the situation, and is beginning to plead for more care in preparation and less haste in operation in genito-urinary surgery.

At Stuart Circle Hospital in Richmond, it has long been our practice to subject every renal suspect to an exhaustive investigation for the purpose, first of all of course, of disclosing the condition (and its ramifications

and associations) for which he has to be treated. If this investigation reveals a situation which can in any possible way be affected beneficially by preliminary conservative treatment, such a course is immediately adopted and consumes a few days, a few weeks, or a few months, as may appear necessary. At the conclusion of this stage the type of operative procedure (if any) is determined and adopted—but not until then, for in the meantime essential changes may have occurred making less surgery sufficient, or no surgery necessary, or more surgery possible.

Four cases are here presented in detail, illustrative of four groups. The discussion has been limited to conditions associated with infection. No reference is made for instance to uncomplicated stones in the ureter which, unless of excessive size, are now all treated conservatively in our hospital.

Mrs. C. L. D., white, female, aged 62, para 2.

Chief Complaint: Pain in left side of abdomen.

History Present Illness: For about 3 years patient has had pain in her left side at intervals but her symptoms did not become incapacitating until 7 weeks ago, since which time she has been suffering almost continuously. The attacks of severe pain came on at varying intervals and are sometimes precipitated and always made worse by exercise, and more especially by anything requiring lifting of the left arm. In the intervals between the attacks she suffers a dragging lumbar ache. In the main the pain is dull in quality and is located in the region of the left kidney with radiation to the lower left quadrant of the abdomen and to the left hip. Since she has been confined to bed her discomfort is much less marked in severity. There has been no frequency of urination but considerable burning at times and occasionally some blood. It has been noticeable that the act of voiding sometimes initiated an attack of pain.

General History: Father died of apoplexy, mother of cancer of stomach, and one brother has cardio-vascular disease. Previous personal history entirely negative except occasional flatulence and stubborn constipation.

Examination: Heart, lungs and extremities negative, but patient is old and infirm in general appearance. Pelvis negative. Abdomen presents nothing except marked tenderness anteriorly and posteriorly in region of left kidney which can be quite easily palpated and which seems to be enlarged. Urine contains much pus. White blood cells 10,800, polys 62%, small lymphocytes 35%, large lymphocytes 3%. Urea nitrogen 11 mg. Renal function 27½% of dye output in two hours.

Cystoscopic: Large purulent bladder sediment. Low grade chronic cystitis in anterior segment of base. Ureteral orifices normal in appearance. Kidney specimens showed much pus in both sides (especially left) and colon bacilli on culture. Dye test produced 11% on the right side in 15 minutes and a total absence of function on the left. The X-ray prior to injection of the pelvis revealed a large branching calculus filling the left pelvis and calyces and the bromide pyelogram at the same sitting showed a typical pyonephrosis.

Upon receipt of the laboratory data indicating a serious grade of infection in the supposedly sound side, more specific data was considered essential and two days later a right pyelogram was made. This showed marked ptosis of the kidney with an obstructive angulation in the upper ureter and with rotation and dilatation of the pelvis.

Diagnosis: Left: Pyonephrosis (calculus). Right: Hydronephrosis (infected).

Comment: The age and infirmity of this patient (the latter due to urinary sepsis) introduced a serious problem in the presence of a dead kidney on one side and on the other a dilated and infected organ which not only was not taking up the burden of its deceased fellow but was actually failing to do even the work expected of it under normal conditions; in other words instead of exhibiting the compensation fortunately so often present in similar cases, it was itself seriously crippled and in need of help. In the opinion of several informal consultants who became interested in this patient, the situation was too precarious to warrant interference and the best outlook for the patient was a policy of general medical supervision without the dangerous assistance of surgery. The case, however, appeared to the writer to present certain possibilities and a tentative effort to effect a radical cure was begun. During a period covering nearly three weeks her general condition was supported and materially improved by ordinary

medical measures, and the local condition in the kidneys was treated by a series of cystoscopic lavages of the pelves, with the hope of removing the infection on the right side and reducing the toxemia from the left. The patient made a slow but steady response; a trace of function began to appear on the left side (1/5 of normal), the function of the right side was carried considerably above the normal level and the infection on this side was entirely eradicated by microscopic and cultural standards. Radical operation was then considered possible.

Operation: Left nephrectomy. The pelvis and calyces were filled with a large branching calculus, and typical pyonephrotic cavities were scattered through the kidney substance.

Post-Operative: The patient made excellent progress until about the 8th day when she developed a temperature and became quite sick. Exploration of her wound, from which the drainage tube had been removed some days previosuly, revealed a pocket of pus at the inferior angle. When this was evacuated and drained, the acute symptoms subsided and she went on to a good recovery. Frequent tests of renal function showed the condition satisfactory. At the time of her discharge from the hospital her bladder urine still showed some pus but her urea nitrogen was 17 mg. and her dye output in two hours 42%, which latter, at her age, would be considered practically normal for two kidneys instead of one recently seriously infected.

Conclusions: 1. A procedure as serious as nephrectomy cannot be undertaken without a thorough exploration of both sides of the urinary tract. In this case the calculus pyonephrosis on the left side clearly, as an isolated proposition, indicated nephrectomy. If this had been hurriedly undertaken without precise information of the condition obtaining on the opposite side, the result would probably have been fatal.

2. The results ultimately secured in this case would appear to justify close attention to the possibilities of preliminary direct treatment pending operations upon the kidney. The desirability of this preliminary stage has been brilliantly demonstrated in relation to the prostate gland. In a comparable degree it is applicable to selected cases in the urinary tract at a higher level. This is not only true as to the successful outcome of the subsequent operative procedure but also as a guide to the type of operative procedure itself, a point illustrated in the following case:

Mrs. E. K. T., white, female, 32, married.

Chief Complaint: Pain in right side.

Two days ago was taken with severe pain in right renal area and now has high fever, rapid pulse, frequent chills, and appears quite sick.

Previous History: 8 years ago she underwent operation for chronic appendicitis for pain in her right side and got no relief. In the following year her uterus was suspended and a right nephropexy was done; gradual but marked relief followed this and she had no more pain in her right side until 8 months ago when she had a severe attack of pyelitis of pregnancy. This together with a contracted bony pelvis and a suspicion of pulmonary tuberculosis made evacuation of the uterus desirable and this was done during the 5th month of pregnancy after catheter drainage of her kidneys had improved her general condition. Subsequent systematic lavage of the renal pelves resulted in a cure of her infection by microscopical and cultural standards. For the past six months she has had no trouble whatsoever. During the past three weeks she has felt somewhat indisposed but paid no attention to this until the present attack began two days ago.

Examination: Patient acutely ill. Exquisite tenderness over right kidney anteriorly and posteriorly.

Temperature 104.2, pulse 120, white cells 21,700, polys 94%, small lymphs 4%. Urine full of pus.

Cystoscopic: Base of bladder edematous, congested and studded with small bullae. Oversize catheters pass easily to both pelves. Clear urine from left side. Thick pus from right side, requiring aspiration which gave immediate relief from pain. Differential function test showed delayed elimination and bare trace of dye excretion on right side and 24% in 15 minutes (normal 15%) from left side. Left kidney urine showed few pus cells and culture was sterile; right urine was all pus and culture showed colon bacilli. Limitation of process to one side suggested some local element rather than simple recurrence of pyelitis which was at first assumed to be the cause of her symptoms. X-ray then made and shadow of calculus size of tip of

index finger seen in right kidney region, which had not been visible in plates made when she was at hospital six months before. Subsequent pyelography definitely located this calculus in lowest calyx and failed to show any evidence of extension of infection into the kidney substance. With the hope of subduing the infection sufficiently to save the kidney and at the same time improve the patient's general condition preparatory to operation, systematic cystoscopic treatment was instituted, including lavages and catheter drainage of the pelvis, for periods varying from 2 to 36 hours. The patient showed steady and marked improvement, pain disappeared and temperature promptly dropped to normal. The amount of pus in the right-urine rapidly diminished and coincidentally the function of this side began to improve and finally reached one-half of a normal reading.

Operation: (12 days after admission). Exposure of right kidney through right lumbar incision. Previous nephropexy made delivery difficult. General condition of kidney apparently good. Pyelotomy in presence of adhesions would have required extensive dissection and in view of precise knowledge of location of calculus, nephrotomy over site of lowest calyx seemed simple and preferable. Stone promptly located and removed and short incision in kidney closed around small tube left in calyx for drainage. Superficial structures closed as usual.

Post-Operative: Temperature from 100 to 101.5 for several days followed by gradual subsidence. Slow but steady convalescence. Cystoscopic review 18 days after operation showed only few pus cells on right side, none on left and negative cultures on both sides. Function on right side at this time still one-half of normal. Total function in 2 hours 56%. Urea nitrogen 18 mg. Discharged on 23rd day with wound solidly healed.

Since leaving the hospital patient has reported at intervals of a month or six weeks for observation. Condition has steadily improved, she is free of all symptoms, gaining in weight and, generally speaking, is thoroughly pleased with the situation. Four days ago a catheterized specimen of bladder urine was free of albumin and pus, and urea nitrogen was 21 mg. and phenolphthalein output 50% in two hours.

Comment: In this case the practically total absence of function, the character of the drainage, and the exceedingly grave constitutional disturbance, all tended to indicate a hopeless situation in the right kidney. The left kidney was showing good compensation and nephrectomy might reasonably have been considered indicated. The absence in the pyelogram of any evidence of pyonephrotic extensions into the kidney substance, while not conclusive of the condition of the organ as a whole, encouraged at least an effort toward conservatism. The result clearly justified this assumption. The steady improvement in the patient changed her from a poor to an excellent risk, and when the operation was finally undertaken the indication of its character was clear-cut,—namely removal of the calculus but not of the kidney.

Mrs. C. B. B., white, female, 27, married, para 2.

Chief Complaint: Pain in left side.

Four days ago patient was taken with severe lumbar pain radiating into her abdomen and hip and down her left thigh. Opiates gave little or no relief. Later she had a chill and a sharp rise of temperature. Since then she has continued to have pain, chills, fever, and nausea and has become acutely ill.

Previous History: Several attacks similar to the present but none as bad as this. Nine months ago was in another hospital for the same trouble but at that time cystoscopic examination resulted in a negative report and no definite diagnosis was ever made. From time to time has had some pain and burning on urination and has 3 or 4 voidings at night. Menstruation normal until last month when there was a prolongation of the flow. Childbearing record negative. Appetite very good until present attack began. Considerable constipation. No history of indigestion. Appendectomy eight years ago. No other previous serious illness except influenza on two occasions. Family record of no significance.

Examination: Face flushed and general appearance is that of very sick woman. Marked tenderness in left upper abdomen. Temperature 105.4. Pulse 136. Urine full of pus. As patient had been under competent observation and palliative treatment for four days without improvement, cystoscopic exploration was considered indicated.

Cystoscopic: Generalized acute basal cystitis with small discrete bullae; bladder very sensi-

tive to manipulation. No. 6 catheters passed through ureters to both pelves; considerable resistance on left side. Pelves irrigated with formaldehyde and patient returned to bed with catheters in position; right catheter withdrawn after 4 hours and left catheter after 9 hours; during this period two additional irrigations of left pelvis were made and drainage from both catheters continued fairly good. Catheter specimens were collected every hour and examined separately; the left urine continued full of pus and colon bacilli; on the right side the pus curve retained a normal level and no bacteria were present in the slide.

The serious condition of the patient did not justify any further manipulative procedures at this sitting with the exception of a simple X-ray examination which was negative for calculi. Following the cystoscopic exploration she continued quite ill and three days later (June 20th) a larger catheter was inserted to the left pelvis which was then irrigated with 1-500 silver nitrate. The right side was not catheterized. Very little reaction resulted; temperature stayed up but nausea subsided and the general condition of the patient was markedly improved. Up to this time the cystoscopic manipulations were necessarily limited to simple procedures designed to save life rather than accumulate data, beyond the primary diagnosis of acute left renal infection. On June 23rd she was again irrigated and a differential function test was done with plugging catheters (No. 8) in both ureters. After an intravenous phenolphtalein injection there was an elimination of 13% from the right side in 15 minutes; and no trace whatsoever from the left side in 25 minutes. The right urine remained negative and the left contained pus 3 plus. The total absence of function and the persistence of high fever indicated a probable severe grade of true renal involvement on the left side. Two days later the left ureter was dilated to accommodate a No. 12 catheter, the silver irrigation was increased in percentage to 1% and the function test was repeated with the result that in 24 minutes the dye began to appear and in the ensuing 15 minutes an unreadable trace was eliminated. Slight as this proved to be it was encouraging and in the meantime the general condition of the patient was improving. On June 28th the left pelvis was again irrigated, the urine showed pus one plus and colon bacilli, and the dye appeared in 8 minutes and in the 15 minutes thereafter 1¼% was eliminated; this was a marked improvement which coincided with the clinical progress of the case. At this sitting a bromide pyelogram was made and resulted in the following report: (Dr. F. M. Hodges) "The left side shows a dilated pelvis and ureter with what appears to be a true stricture in the first part of the ureter. Near one of the upper calyces the kidney structure is destroyed in a small area. I believe the kidney badly damaged but cannot determine to just what extent."

The data was now considered complete and it will be noted that the X-ray evidence conformed with the pyuria, the depression of function, the septic chart, and the general clinical picture in placing this kidney in the group commonly known as surgical and commonly treated by nephrectomy. The progress already made, however, justified further conservatism under close observation. Catheter drainage and irrigation was persisted in and after five additional cystoscopic manipulations the patient was practically well. At that time she was up and about with normal pulse and temperature; pus had disappeared from the left kidney urine which, however, still gave a positive colon culture; all pain had gone and the functional dye output on the damaged side was 8% in 15 minutes—a little more than one-half of normal. On August 4th, seven weeks after admission, she was tentatively discharged with the understanding that she would return subsequently for urinalysis and a final function test and pyelogram. Her recovery has been so complete, however, that she refuses to come within sight of the hospital.

Comment: Upon general surgical principles, early nephrectomy would have been justified in this case. The character of the urine, the condition of the patient, the primary function readings, and the X-ray data united in indicating a hopeless situation, judged by the older standards. The outcome, however, teaches a different lesson. Our experience with this case and certain others of the same type, including two Brewer kidneys with coccal infections and probable infarctions lead us definitely to the following conclusions:

1. Contrary to the previously accepted standards, acute uncomplicated infections of the kidney will, if properly managed, very rarely require surgery.

2. In the presence of such an infection cys-

toscopic exploration, catheter drainage, and lavage of the renal pelvis should be promptly undertaken if there is under ordinary palliative treatment no marked improvement in 48 hours.

3. The acute illness of the patient does not contra-indicate this procedure though it demands care, speed, and extreme gentleness in technique and the avoidance of anything except absolutely essential manipulation.

Mrs. R. T. A., white, female, age 23, married, para 0.

Chief Complaint: Pain in right side.

Several days ago patient developed violent right lumbar pain and since then has been critically ill with nausea, vomiting, chills, fever of 104, rapid pulse, and general evidence of a severe grade of toxic absorption. Urine full of pus.

Patient is now about 4½ months pregnant. A few weeks ago she underwent an operation for sub-acute appendicits and the evidence is not clear that her real trouble at that time was not the onset of pyelitis. Her previous history is otherwise negative and her general physical condition has been very good until the beginning of the present attack.

Immediate cystoscopic examination showed the usual projection of the pregnant uterus into the bladder but the absence of any marked evidence of cystitis except in the trigonal region. No. 10 catheters passed easily through both ureters. Urine was found under great tension in both pelves with a retention of about 1½ ounces on each side. Differential function test showed on appearance of the dye simultaneously from the two sides in 3 minutes with a 20% output in the following 15 minutes from the right side and 30% from the left side, a hyperfunction or hyperpermeability not uncommon at the onset of certain acute renal infections, especially in pregnancy. Both pelves were irrigated with formaldehyde and, in view of the limitation of pain to the right side, the left catheter was then withdrawn. The right catheter was retained in position 24 hours during which time the drainage was very free. Coincidently the patient enjoyed complete relief of pain and temperature dropped from 104 to 100. Examination of a series of specimens from the right catheter produced a pus curve varying from normal to pus three plus—a character of intermittence of great significance as pointed out by the writer in a separate report. A later examination showed essentially the same condition on the opposite side and colon bacilli was found in cultures from both kidneys. A pyelogram showed the characteristic dilatation of both pelves and ureters. Frequent irrigations and drainage of the pelves produced spectacular clinical results and in spite of the long siege ahead the patient was enthusiastic in her desire to preserve the pregnancy and obtain a living child. After the subsidence of the acute symptoms the interval between treatments was lengthened, the patient leaving the hospital and returning to the city at stated periods. Retention disappeared from the left but persisted to the end on the right side. After July 15th, the urine was negative for infection microscopically and culturally. On August 15th, four months after the beginning of treatment, the patient fell down a flight of stairs and precipitated a labor about three weeks ahead of time. Both mother and child survived the ordeal and are now well and happy. One month later the mother presented herself for a final examination which disclosed negative urine and normal function—15% on right and 17% on left side in 15 minutes. It is interesting to note the absence of hyperpermeability at this stage.

Comment: The critical condition of this patient when she entered the hospital, the serious grade of bilateral infection present, and the advanced degree of pelvic retention due to embarrassment of the ureters by the enlarged uterus, apparently made the outlook rather gloomy at mid-pregnancy with 4½ months still to go in the face of these difficulties. Evacuation of the uterus had to be seriously considered and would ordinarily have been done. Conservatism was encouraged by the attitude of the patient, the prompt response to treatment, and the fact that at about this period of pregnancy the uterus is beginning to lift itself out of the pelvis, to some extent at least relieving the ureters of pressure.

The case exhibited is one of a considerable group, the complete study of which has enabled us to become better acquainted with the pathology accompanying pyelitis of pregnancy and the prognosis under appropriate conservative treatment. This data will be presented in full subsequently. The conclusions germane to the present discussion might be stated as follows:

1. Pyelitis of pregnancy is always secondary to ureteral obstruction and the treatment is relief of this condition by ureteral catheterization and drainage.

2. Acuteness of symptoms indicates rather than contraindicates immediate cystoscopic manipulation.

3. Evacuation of the uterus is exceedingly rarely necessary and direct attack upon the kidney, still occasionally proposed, practically never necessary.

Stuart Circle Hospital.

THE RELATION BETWEEN SYPHILIS AND DIABETES MELLITUS.*

By JAMES H. SMITH, M. D., Richmond, Va.

Two diseases as common as syphilis and diabetes would be expected sometimes to occur coincidently merely according to the laws of chance. If this did not happen, we would have to conclude that there was some antagonism between the two, the one protecting the individual from the other. It is necessary, therefore, that something more than occasional coincidence must be shown before any importance can be attached to syphilis as a cause of diabetes.

The literature is not wanting in such claims. Between 1907 and 1916, Warthin and Wilson,[1] studying at autopsy the pathological anatomy of six cases of diabetes, reported syphilitic histological changes in all six, the presence of spirochetes in the myocardium of four, and in the pancreas of one. They thought it very probable that latent syphilis is the chief factor in the production of the form of pancreatitis most frequently associated with diabetes, though diabetes is not always coincident with severe degrees of this type of pancreatitis. This is the point of view of a pathologist, and it is the kind of evidence that commands consideration. Yet, the conclusions do not receive the general endorsement of clinicians.

Futcher's[2] statement is representative of the usual clinical view when he says: In occasional instances, diabetes may be traced to a syphilitic infection.

Williams,[3] in 143 cases of diabetes, obtained only four positive Wassermann reactions. His study of physical signs was equally lacking in evidence suggestive of syphilis.

Mitchell,[4] while admitting that diabetes is relatively infrequently due to syphilis, reports a case of the two coincident conditions at U. S. Army Hospital No. 9. He thinks that great care should be taken to recognize syphilis in the diabetic, not being content with a negative Wassermann reaction. The hope of reward he holds out, however, is limited to checking the further advance of the infectious process, damage already incurred being irreparable.

The case of Mitchell's just referred to, was one of those later reported by Allen and Mitchell,[5] who found syphilis in four of a total of thirty-seven cases of diabetes at the same hospital. From this report it appears that, while the luetic cases were treated with arsphenamin, mercury and iodides, "in no instance did the diabetes run a course different from the average thereafter."

Rosenbloom[6] found evidence of syphilis in seven out of sixty-two cases of diabetes. Five of the seven underwent antiluetic treatment without improvement in carbohydrate tolerance.

Approaching the extreme of opinion opposite to that of Warthin and Wilson, Joslin[7] finds that syphilis is less common in diabetics than in the general population. He states that the statistics of the Peter Bent Brigham Hospital and of von Noorden agree with his own.

Lemann[8] has investigated the matter very carefully, and comes to conclusions contrary to those of Warthin and Wilson. He states that only once in his series of private cases, did anti-syphilitic treatment seem to have any favorable effect on carborhydrate tolerance.

Lemann's report is based on a study of the two conditions in the negro. The objection may come to mind that, while syphilis is abundantly common in the negro, diabetes is rare, possibly indicative of some unusual stability in the matter of carbohydrate metabolism in the negro race. Diabetes in the negro is not so rare as was at one time thought. During a ten year period at the Charity Hospital, New Orleans, Lemann found that there were 135 white diabetics admitted, and fifty-nine negro cases. While the negroes thus furnished only thirty per cent. of the diabetics, as against forty-three per cent. negroes in a total admission of 160,044, manifestly these figures make no case for immunity of the negro to diabetes. We must assume, there-

*Read before the Richmond Academy of Medicine and Surgery, October 24, 1922.

fore, that unless the negro has some unexplained immunity to syphilitic pancreatitis, then in view of the admitted frequency of syphilis in this race, there should be a large incidence of diabetes if syphilitic pancreatitis is at all a frequent cause of diabetes. Lemann concludes that the alternative explanation is more acceptable, viz; that there is no relation between the incidence of diabetes mellitus and syphilis; hence, there is no probable etiologic relation between the two.

I am convinced that the weight of evidence is in favor of these two propositions: That, considering the large numbers of cases of each disease, the coincidence is not great and a causal relationship is infrequent; and that antiluetic treatment does not often improve the diabetic state.

In a series of seventy-nine cases of diabetes seen in private practice, I have found clear evidence of syphilis in only two cases, both of whom had also heart lesions, probably also syphilitic. Both gave histories of the infection and positive Wassermann reactions were obtained. Both were given antiluetic treatment. One rapidly progressed to a fatal ending, dying, I think, of the cardiac effects of aortic regurgitation, and without improvement of carbohydrate tolerance. The other, a recent case, is under treatment. In the series referred to, a Wassermann test was not done in all cases, though in the latter part of the series, it was done almost routinely.

There was a third case in which a positive Wassermann was obtained, which I wish to report in some detail: W. F., a white boy aged 13, was referred by Dr. William R. Martin. He had been living in the country with his parents, and entered the hospital September 7, 1921. He was said to have been sick only for a month, though in view of the insidious onset of this disease, probably it dated somewhat further back without the parents having noticed the child's illness. On admission he was apparently on the verge of coma, as evidenced by the general condition, a carbon dioxide tension of the alveolar air of sixteen mm., and a corresponding figure for the carbon dioxide tension of the blood. Blood sugar was found to be 340 mg. per 100 c.c. A 4-plus Wassermann reaction was reported. This was unexpected, because he was the third of eight children, all healthy except this boy, and there was no history of syphilitic parentage. In spite of extraordinary confidence in the pathologist, Dr. Guy Hopkins, I asked him to repeat the test, which he did with the same result.

Under a fat-free and liberal carboydrate diet, and some bicarbonate of soda, the acidosis improved and the carbon dioxide tension of the alveolar air rose to twenty-nine mm. Cautious attempts were then made to reduce the sugar. About the same time treatment for syphilis was begun. He received two injections of neosalvarsan, 0.3 gms. There was no reaction. On September 27th he was allowed to go home, though not as a matter of choice. He was on a restricted diet, but not one designed to render him sugar-free, and the prognosis was bad. It could not have been worse, as he died on September 28th.

I do not now think this boy had syphilis in any form. In December, 1921, Mason[9] reported that in a series of 168 cases treated at the Royal Victoria Hospital, Montreal, in the previous four years, two cases were observed which gave strongly positive Wassermann reactions of the blood, without a history or other signs or symptoms of a syphilitic infection. Both cases were treated for their supposed syphilitic infection over a short period of time, the Wassermann in each case promptly becoming negative, but with a rapid decline of carbohydrate tolerance in each. Mason concludes that a Wassermann reaction unsupported by other evidence, must be considered conservatively.

I am not prepared to discuss the biochemistry of non-specific Wassermann reactions. Blood with a high lipoidal content, such as often occurs in diabetes, would theoretically be more sensitive to the Wassermann test than blood of normal lipoid content. Whether the tendency can be controlled as Van Saun[10] claims, I do not know. But in the future I shall not look upon a positive Wassermann test in a severe diabetic as an indicaiton for antiluetic treatment, without confirmatory evidence of the specific nature of the reaction.

Conclusions.

1. Syphilis is an infrequent cause of diabetes mellitus.

2. When the two occur in the same patient,

anti-syphilitic treatment does not often improve carbohydrate tolerance.

3. A positive Wassermann reaction is not in itself diagnostic of syphilis in a diabetic of severe grade.

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A CASE OF TRAUMATIC ASPHYXIA.

By C. S. LAWRENCE, M. D., Winston-Salem, N. C.

Lawrence Hospital, case No. 980. Past history of no importance. Was admitted to hospital 7:00 P. M. December 3, 1921, with the following history. While driving an auto, at a rather rapid rate of speed, he approached a curve in the road, the auto took to the ditch, overturned, and pinioned the driver under the car. He does not remeber how he was rescued but regained consciousness within some thirty minutes after the car had been removed from him. Companions say that the back of the front seat was resting across his chest. Admitted within an hour after accident, pulse 92, temperature 96.2, respiration 28.

PHYSICAL EXAMINATION. A well nourished and developed young white man showing signs of marked distress. Head and scalp, negative. Eyelids somewhat puffed and red. Pupils equal and react to light and accommodation. No paralysis. Forehead, face, and neck extending to points of shoulder, sternal notch in front and trapezius muscle behind show a peculiar bluish red cyanosis with pale spots and other petechial areas resembling minute subcutaneous hemorrhages. Discoloration disappears on pressure.

Chest: Well developed, symmetrical. Respiratory rhythm rapid and shallow, slight expiratory grunt. Breath sounds clear and distinct, no rales in either lung, no dullness on percussion.

Heart: Normal impulse. No increase in dullness, no thrill, nor murmurs, no accentuation. Pulse full, strong and well sustained.

Abdomen: Not distended. no scars, no muscle spasm, no tenderness.

Genito-Urinary: Negative.

Skin: Moist, otherwise healthy, except see above.

Bones and Joints: Negative.

Neuro-Muscular: Quite restless and at times boisterous, has odor of whiskey on breath.

Convalescent Record: December 4, 1921. Eye grounds clear, nerve head normal. Retina clear, vessels normal, sub-conjunctival hemorrhage both eyes. Patient complains of much pain in chest and abdomen. Breath sounds clear.

December 5, 1921. Few moist rales in chest, both sides, meteorism quite marked, patient restless.

December 6, 1921. Patient spat bloody mucus last night and this morning, moist rales base both lungs.

December 12, 1921. All lung conditions cleared, discoloration of skin and sclera much improved, patient feels well. Discharged from hospital.

Traumatic asphyxia is a most distressing condition, both to surgeon and patient. The anxious restless state of the individual with the dusky peculiar color of the skin, including the sub-conjunctival hemorrhages with coughing and raising muco-sanguineous sputum, and painful gaseous distention of the abdomen, demand all the wits of the attending surgeon. The condition, however, is not serious as one is led to believe on observing one's first case. An examination of the literature on this subject shows that the majority, in fact, all cases that recover from the primary injury usually survive the asphyxia (Ruppanner.) The condition is due to a great pressure on the chest causing a back flow of venous blood and stasis in the capillaries. There is not an extravasation of blood into the tissues as one might conclude on seeing a case. Beach has shown this by removing sections of the skin from back

of the neck in his case and examining microscopically all sections proved to be normal. Hunter comes to the same conclusion from animal experimentation.

The limitation of the discoloration to the face, neck and upper chest is due to the lack of valves in the veins of this region (Perthas.)

Green in *Surg. Gyn. & Obstet.*, August, 1922. reports a case and reviews the literature.

TREATMENT: Consists of stimulants, heat to body, fluids and morphine to relieve pain and distress. In the case here reported, we simply made the patient comfortable by the use of morphin and atropin, water copiously, mustard plasters to the chest. We gave pituitrin for the meteroism, magnesium sulphate as a purgative and, after the first few days, general massage.

OBSTETRIC STATISTICS.*

By M. PIERCE RUCKER, M. D., Richmond, Va.

Time was, in the memory of most of us present, when obstetrics was a standardized procedure. Prenatal care consisted of an occasional urine examination.[1] The patient was allowed to deliver herself[2] and, if she failed, forceps were used. If this failed, resort was had to Cesarean section or craniotomy,[3] depending upon the availability of the surgeon. The common complications, eclampsia and antepartum bleeding, were handled along fixed lines, accouchement[4] forcé in the former case, and gauze packing in the latter.[3] If the result was satisfactory, we congratulated ourselves; if otherwise we forgot it with a feeling of satisfaction of having done our duty. What was the sense of worrying when we had done all there was to be done?

Now things have changed. We are in the midst of an obstetrical renaissance. The pregnant woman is thoroughly studied and variations from the normal noted, whether they can be corrected or not. The effect of these variations upon the final outcome opens a large field for inquiry. The same is true in a larger sense in regard to the conduct of labor. When pains start, shall we do anything for the patient's comfort, and if so, what? This question has been a live one since the advent of Gauss' "Dammerschlaf."[5] When the patient reaches the second stage, the modern obstetrician is still further perplexed. Shall the patient be left alone, or shall we terminate matters with pituitary extract,[6] DeLee's prophylactic forceps,[7] Potter's version,[8] or Cesarean section?[9] The choice of an anesthetic is less confusing, but still we have to decide between chloroform,[10] ether,[11] and gas-oxygen.[12] The management of the third stage is very perplexing. Shall we "play hands off,"[13] or shall we guard the uterus with a hand on the fundus?[14] Shall we give pituitary extract, and if so, when; immediately after the birth of the baby,[15] when the placenta separates, or after it is expelled?[16] Shall we give ergot,[17] quinine,[18] or morphin and scopolamin?[17]

If such confusion exists in regard to the management of a "normal" case, what shall we say about the abnormal ones? If the patient has a convulsion, and even today they sometimes have convulsions, shall we treat her according to the Stroganoff[19] method or Cesarean section,[20] or by some method between these two extremes?[21] Shall placenta previa be treated by section,[22] by gauze packing,[23] or by rubber bags?[24] A similar series of questions might be propounded in reference to ablatio placentae,[25] puerperal sepsis,[26] and other complications. Even ruptured uterus offers a choice, sometimes being treated by laparotomy,[27] and sometimes per vaginal packing.[28]

What is the correct answer, if there is any one answer? My own answer is, that in any given case the best method is the one giving greatest ease and comfort to the mother that is consistent with the safety of both patients and the facilities at your disposal. I do not see how you can be more definite with the present state of obstetrical knowledge. The definite answer lies in the future and must depend upon accurately collected data, carefully and impartially studied. It behooves us all, whether we work in large clinics or in the home, to gather this information. The statistics from a large hospital are impressive by reason of the weight of numbers, but the general practitioner has the advantage of knowing his patients better, and of seeing the remote results. The hospital has to be content with the knowledge that the mother and child were discharged well (or otherwise). The more fortunate clinics have social workers who can follow the patients for perhaps a year, but only the general practitioner is in a posi-

*Read at Southwestern Virginia Medical Society, September 13, 1922.

tion to follow the mental and physical development of the child or the late complications of the mother.

An obstetric history need not be an elaborate affair. It should set forth the physical condition of the mother in her pregnancy, especially the condition of the heart, lungs, kidneys, and possible foci of infection, kind of pelvis, condition of the soft parts and, if possible, the blood Wassermann. The presentation, duration and kind of labor, method of delivery, the anesthetic used, the condition of the baby, whether it had to be resuscitated and, if so, by what method, the size of the baby, especially its length, the condition of the perineum and the treatment of the third stage, should be noted. The third paragraph should contain the complications of the puerperium and the findings at the final examination in the fourth to sixth week postpartum. The ultimate results as they concern both mother and child should be noted whenever possible.

While the recording of such data is comparatively simple, the utilization of it is a more difficult task. All the weaknesses and limitations of statistical methods apply to obstetric statistics. In the first place, a word as to the mental attitude of the investigator. In speaking of laboratory investigation, the great Claude Bernard,[29] founder of experimental medicine, said "Put off your imagination as you take off your overcoat, when you enter the laboratory; but put it on again as you do your overcoat when you leave the laboratory. Before the experiment and between whiles, let your imagination wrap you round; put it right away from you during the experiment itself lest it hinder your observing power." In like manner, there is a proper attitude in the domain of statistics, and it should be that of a seeker after truth, rather than that of an advocate. In no branch of medicine do the "units of measurement" vary as much as in obstetrics. The adoption of the international classification of the causes of death has helped a great deal. Yet there is a great variation in the statistical value of what is at first thought a very definite and fixed unit, i. e., a maternal death. A death of a mother from Cesarean section for eclampsia is an entirely different matter from a death from Cesarean section for contracted pelvis at the onset of labor. The death rate from puerperal causes is 50 per cent. greater among negroes than whites.[30] The death rate from puerperal sepsis is many times greater in the urban population than it is in the rural population.[31] Such variations have to be taken into consideration lest your statistics lead you astray.

Studies in infant mortality are subject to even greater variations. Some men report all infant deaths regardless of the intra-uterine age,[32] others all above a denfiite weight or length,[33] others only those at term. This brings us to the question of what constitutes maturity. Obviously, you must use a different standard of measurement for Hindoo babies, for instance, whose normal birth weight is 5 pounds 10 ounces[34] than for Caucasian, whose birth weight averages 7.25 pounds.[10] The negro baby is definitely smaller than the white baby born in the same locality.[35] Such details, as well as the mother's condition, must be taken into consideration in studying infant mortality. When a careful operator[36] reports a fetal mortality of 40 per cent. in Cesarean section, for placenta previa, it does not mean that Cesarean section is a dangerous operation for the baby. Several years ago I reported my first 200 cases of Potter's version,[37] I was careful to state that, while the technique was Potter's, the indications were not: that in nearly every case there was some complication, varying from exhaustion of the mother to neglected shoulder presentation or placenta previa, that enabled me to get consent to terminate labor. Furthermore, 44 per cent. of the infants that died were known to be dead when I first saw the mothers. Yet, my fetal mortality has been repeatedly quoted in proof that Potter's method of performing a version is dangerous for the infant.

Secrist[38] says "Too great care can not be taken to make comparisons legitimate. This is particulary true in the case of statistical comparisons since they are numerical and seemingly exact. A numerical statement of a fact is often taken by the unwary and uninitiated as sufficient proof of its absoluteness and finality, and is made to support predetermined conclusions or premises to which it has no relation." To further quote from the same author[38] concerning crude and corrected coefficients, "frequently only crude rates are available. To use such co-efficients, however, is

never to be preferred when it is possible to make the appropriate correction. It will be noted that the correction consists essentially in more accurately defining units and in applying each phenomenon rigidly to the conditions producing it. Where this is not done, comparisons for different periods or for a single period for different places are extremely hazardous. The amount of error involved is almost never known and, therefore, provision for it can seldom be made." An example of this is the classical report on the maternal and infant mortality in Newark by Julius Levy.[39] In 1916 the midwives delivered 49 per cent. of the babies in Newark, with seemingly better results than were obtained by physicians. On more careful analysis it is seen that almost one-quarter of the births were of Italian mothers, a notoriously good obstetric risk, and of these 88 per cent. were delivered by midwives. Furthermore, 29.8 per cent. of the births were primiparae, a recognized poor risk as compared with multiparae, and of these 70 per cent. were delivered by physicians. The article is replete with tables of all descriptions, sixteen in number, and yet the only definite information available concerning maternal mortality in the midwife practice is based on "586 (out of 11,446 births for the year) mothers who had received prenatal observation from our Department (the health department) and then were delivered by midwives." In other words, if the health department were efficient, and I have no doubt but that it was, all the mothers with impaired kidneys, lungs and hearts, all with contracted pelves and positive Wassermanns were transferred over to the physician's side. Yet no mention of this is made when these figures are quoted by Holmes[40] and others.[41]

Another common fault with obstetric statistics is that the series reported is not accurately described. For instance, Polak[42] and Beck,[43] either separately or jointly, have reported three series each of 1,000 cases from the same clinic within a period of one year. In the series reported by Polak[42] before the American Gynecological Society in June, 1921, there were four maternal deaths. In the report of Polak and Beck[43] in Philadelphia in October, 1921, there is no mention of maternal deaths, while in May, 1922 Beck[44] reported the third series before the American Gynecological Society with two maternal deaths. One would naturally like to know if these are three separate and distinct series or if there was any overlapping. There is nothing about the two series that have been published to identify them. In the first report[42] there are several amusing errors. In Table I the author, or the type-setter, makes 100 consecutive cases have 106 contracted pelves, and in Table IX, seven deaths in 4,500 deliveries is figured as a mortality of .0015 *per cent.*

Statistics should be relevant to the question under discussion. In "Fads and Fancies in Obstetrics," Holmes[40] comes to the conclusion that modern fads are responsible for the high obstetric mortality and supports his contention by an elaborate table that shows that the maternal mortality was 1.28 per cent. in 1747, 1.9 per cent. in 1847, .92 per cent. in 1856, 1.18 per cent. in 1861, .41 per cent. in 1890, .96 per cent. in 1910, 1.01 per cent. in 1912, .8 per cent. in 1915, and .76 per cent in 1920. The neo-natal mortality was 9.6 per cent. in 1747 (Dublin Lying-in), 9.5 per cent. in 1876 (Moran), 5.8 per cent in 1890 (N. Y. Lying-in), 5.4 per cent. in 1907 (Edwards*), 8.8 per cent. in 1910 (N. Y. Lying-in), 7.86 per cent. in 1912 (N. Y. Lying-in), 6.6 per cent. in 1915 (N. Y. Lying-in), 7.05 per cent. in 1915 (Williams), and 7.03 per cent. (Augustana Hosp. Chicago). If maternal and neo-natal mortality have changed so little in the last 250 years, what have modern fads and fancies to do with it? In further support of his contention he quotes the midwife statistics referred to above.[39]

Perhaps I can best illustrate the variations to which statistics of infant mortality are subjected by considering a concrete example. Since Potter's version has figured so prominently in recent statistics, let us take the versions in my private work in the past year, from September 1, 1921 to September 1, 1922. I have delivered 133 babies by Potter's method. There were five placenta previas, eleven toxic cases with blood pressure from 180 to 220, one prolapsed cord, and two acute hydramnios so that in only 114 cases was version done in accordance with Potter's indications. In these 114 there was one still birth and two infant deaths, or a mortality of 2.63 per cent. For the sake

*In the original (J. A. M. A. LXV: 1336, 1915) the author's name is given as Mary Lee Edward, and the figures as 6.3% instead of 5.4%.

of illustration, however, let us consider the series as a whole. The neo-natal rate for the series as a whole is 9.77 per cent. which is comparable to the rate of 12.71 per cent. Moran[32] obtained in Washington, except that 70 per cent. of Moran's cases were negroes and only three of mine. To make the series comparable to Williams' we must deduct two sets of non-viable twins that were born before the seventh month. The infant mortality then figures 6.98 per cent. against Williams' 7.05 per cent. Brodhead,[45] in discussing Potter's paper before the Alumni Society of the Lying-in Hospital, gives his results in 1,000 consecutive cases as follows: 960 infants lived at least two weeks. Of the forty-five infants that died, thirty died from some cause that could not be prevented which, when deducted, gave him a mortality of 1.5 per cent. to which he added 1 per cent. for conscience sake, I presume, and obtained a figure of 2.5 per cent. with which to compare to Potter's 2.3 per cent. which included all neo-natal deaths for 1921, monsters and all. Applying Brodhead's rule to my series, we would have to deduct one case of marked parenchymatous degeneration of the liver and kidneys in a baby that lived 24 hours, one case of congenital heart disease, one case of large hemorrhage into the right suprarenal capsule whose mother had acute hydramnios, one of hydrocephalus and hydramnios, five premature babies of toxic mothers, and three premature babies and placenta previa. This leaves one case, or a fetal mortality of .75 per cent. plus the arbitrary 1 per cent. or 1.75 per cent.

Apparently, statistical methods have been limited to the consideration of maternal and infant mortality and maternal morbidity as indicated by the mother's temperature. That such information does not give the whole picture, permit me to cite the following case, that of a negro, pregnant for the first time, who entered St. Philip's Hospital, last July, in convulsions. Very little could be learned of her history except that she had had several convulsions. She was put through the usual routine for these cases, morphine, stomach washing with castor oil left in the stomach, colonic irrigation, and 300 c.c. of 20 per cent. glucose solution intravenously, after first removing 200 c.c. of blood. The morphine was continued during the day, but apparently had little effect either upon the convulsions or the respirations. The patient had twelve convulsions after entering the hospital. In the evening the head appeared at the vulva and was lifted off of the perineum with forceps. No anesthetic was necessary. The patient was comatose all night. The next morning she seemed to be in a critical condition. Both sides of the chest were filled with coarse rales. She was dyspnoeic and markedly cyanosed, reminding one of the "flu" patients just before death. Her temperature was 105 in axilla.

With the idea of relieving the cyanosis, oxygen was introduced into the peritoneal cavity until there was tympany over the uterus. I might add that the uterus became as hard as stone. The patient seemed somewhat better and, after two hours, a stomach tube was introduced and three drams of tincture of digitalis were poured into the stomach. By afternoon the patient looked like another being. Her temperature had subsided almost to normal, and the rales had disappeared. The mother made an uneventful recovery. The baby, however, did not do so well. At birth it seemed normal and cried spontaneously. The next morning it began to have general convulsions that persisted for almost a week. Lumbar puncture showed red blood cells and laked blood on the second day and a purulent fluid at the end of the week. Unfortunately, no smears were made. The child had no further convulsions, but remained spastic and took its nourishment poorly. Statistically, the result in this case was perfect, both mother and child leaving the hospital alive. Just how bad it really was, I will be glad to report to you if you will extend to me another invitation some ten years from now.

Conclusions.

1. There are a great many problems in the practical management of cases of labor that are far from being settled.

2. It is the duty of everyone who does obstetrics to keep careful notes and do his part in an effort to standardize obstetric precedures, both for the hospital and for the home.

3. Statistical methods are necessary for the solution of these problems, but they have their limitations and, unless used with fairness and accuracy, are apt to be misleading.

4. For the sake of suffering womanhood, let us keep an open mind, choosing what is good and helpful, and rejecting what is harmful and dangerous.

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THE NEGLECTED LATENT FACULTY.

By WM. JOSEPH JONES, M. D., Crozet, Va.

In the VIRGINIA MEDICAL MONTHLY for October, I find a communication by Dr. Stephen Harnsberger, which expresses so well my own thought, I cannot refrain from giving a hearty word of approval, and a sincere commendation of all his ideas. Like Dr. Harnsberger, in my search for knowledge, I have many times stepped beyond precedent. My limited opportunities made it necessary for me to seek to know things, because burdened by a deep realization of my ignorance. Dr. Harnsberger leaned over the boundary line between the scientific and the non-refuted facts of human life, that science might be promoted and humanity benefited. I looked about me, and reached out for such information as I could obtain from anywhere and any source, so that the sick might be healed and my exalted profession be not in any degree compromised. I made use of the "*latent faculties*" within me and ignored precedent, but sedulously guarded professional etiquette and honor. Nevertheless, I profoundly felt the need for higher attainments in my sympathetic, as well as my mental nature.

I am sure the reader will excuse my personalities when he is assured that I have no idea of self-praise or exaltation. My eighty-one years of age, if not my modesty, will exclude me from that which a young man might seek.

When about fifteen years old and while a pupil in an ante bellum "Old Field" school, I commenced the study of medicine under Dr. B. P. Morris, of the county of Amherst. In those days physicians who instructed students and prepared them for college were called *preceptors*. Dr. Morris was a good physician, an educated gentleman, and an intelligent preceptor. He and his pupil joined the Medical Society of Virginia at its session in Lynchburg in 1871. Dr. Morris served well and faithfully his generation in the community in which he practiced and passed into the unknown many years ago, a useful citizen, a skillful and beloved physician, and a Christian gentleman of the highest order.

While under Dr. Morris' tutorship I continued in the community school several years and taught one year before joining the Confederate Army, in April, 1861. I served four years as a private, a hospital steward, and a detailed assistant surgeon. I took the oath of allegiance to the United States government in April, 1865, and entered the University of Virginia as a student of medicine in September of that year. Since the month of June, 1866, I have engaged in the practice of medicine with a degree of success of which I am not ashamed. The sources of my knowledge, little or much, have been medical journals, books and consultations. The latter has imparted most information and pleasure.

Like Dr. Harnsberger, I started out to learn all my capacity would allow, from anybody and any source. Many times, whilst paying respectful attention to suggestions from an unlearned but experienced old woman, I have obtained an idea which aroused the latent faculty within me and pointed the way to the relief of the patient, and may be the cure.

A very wise teacher, many years ago, said to a young man whom he was instructing, "Wisdom is the principal thing; therefore get wisdom; but with all thy getting, get *understanding*." Had the teacher lived in this age of the world he probably would have said to his pupil, "It is very proper to obtain all the scientific knowledge you can, but be sure to mix plenty of common sense with it." This should characterize the medical profession above all other callings in which men and women engage. A true physician, who places proper values on the ethics of his exalted profession, can afford to be lenient and respectful to those he cannot regard his equal in capacity and attainment.

In the autumn of 1868, I was called in consultation with one who was a *so-called* doctor, who, previous to the War Between the States, obtained a license to practice medicine, by applying to the county court, which then was composed of three justices of the peace. The court granted a license on the testimony of three reputable citizens that the applicant was a suitable person to administer medicine to the sick. I found the patient to be a girl who had married, and at less than fifteen years of age, was in the throes of a severe labor. The occiput of the child was presenting and firmly wedged under the pubis, where, I was informed, it had been for two or more hours. The doctor said he thought the brain would have to be taken out, but he had not performed that operation, nor had he witnessed it. I had not yet provided myself with instruments.

Having satisfied myself the child was dead, I proceeded to prepare for my first craniotomy, which I did with a caseknife broken off and ground to a suitable shape, and a pair of canine tooth forceps, which I had in my medical saddle pockets. The young mother made a prompt recovery.

There is a long stride from that day to this. I am not sure that success in the treatment of diseases has kept pace with scientific learning. The latent faculty, or endowment with understanding, has not kept up with the double quick march of the scientific modus operandi of materia medica. The fly blister and flaxseed poultice seemingly held back the skeleton fingers of the demon of death and rescued the patient from the damp walls of the grave. The change to cotton pads and mustard plasters, with outdoor atmosphere, is not a big improvement when tested by comparison of the death rate now and then. The scientific nursing that comes to the suffering ones, like the visits of angels from a better world, and the learned use of splendid pharmacal preparations, composed of tested chemical formulas, should present to this generation larger benefits to humanity. Facts seemingly point to latent faculties quietly sleeping in beds of brain tissues which, if developed by bedside observations and other means of growth, would have kept medicine along on the same plane with the great, and, I may say, wonderful advance in skillful surgery.

Sometimes we know things intuitively, sometimes by observation, and sometimes logical ideas lead on to scientific conclusions. Many years ago, while I was engaged in doing a mine practice, one of the workers asked me to prescribe for muscular pains he was having and which he said was rheumatism. After a few questions, I made a mental diagnosis of myalgia and proceeded to prepare a stimulating liniment for his use. Whilst I was making the mixture he asked, What is rheumatism? I simply replied, I do not know. His face instantly exhibited an expression of lack of faith in my professional ability. I saw at once I had to say or do something to restore confidence, so calling his name, I said, "Mr.——, you are a carpenter?" "Yes, sir." "In your daily work you make use of oak, pine and poplar lumber?" "Yes, sir." "You know the oak, the pine, and the poplar each when you see it?" "Yes, sir." "You know that these different kinds of wood I have mentioned grow out of the same soil?" "Yes, sir." "Now, Mr.——, can you dig into that soil and find out what it is that causes one tree to be oak, another pine, and another poplar?" He understood and reached for his package of medicine with a smile of confidence and satisfaction. It is worth while not to appear too scientific, but "*be all things to all men.*" Be pleasant and chummy. Unbend for the sake of science as well as humanity, but never forget that you are a physician, whose business it is not to prescribe alone for physical ills and obtain a proper fee for it, but to make better citizenship and to raise to a higher plane the moral standards of society, maintaining under all conditions, your personal as well as professional integrity. Medical science does not altogether consist of formulary and deduction. The revelation of truth is as much the result of common sense, as it is a reward of scientific study.

There were two boys who were brothers. They grew to manhood under similar conditions. They worked, played and studied together. Both had around them the good influences of moral and intelligent parentage. Both chose the practice of medicine as their life work. Both graduated at the Jefferson Medical College of Philadelphia. One located in a thriving city; the other in a contiguous county. Both were reported to be unusually well qualified. One was a brilliant success; the other a notable and noted failure. One gave heed to bedside and psychological conditions and family histories. He also placed value on sympathy as well as on the drugs he administered. The other went to text books and magazines with the symptoms of his patients, and adopted the ideas and recommendations of others. The successful brother cultivated his latent faculty. He thought and judged out of his own storehouse of knowledge, acquired by deliberate and diligent study, and the absorption of truth found in consultations and anywhere he could obtain it. Although the other was cultivated in books and the amenities of society, and in the excellences of business and was counted a thorough gentleman and excellent scholar, he was a failure.

A physician cannot acquire too much of the sciences of his profession, but he may be deficient in that mysterious thing called common sense. "A little learning is a dangerous thing"

is a truthful aphorism. It is as true to say that a little common sense is better than no sense. One may absorb much that is scientific, and be destitute of useful knowledge.

I do not know how Dr. Harnsberger defines "*Latent Faculty*," but, as I write, the suggestion comes to me that it is deity in man which makes him more than a vertebrate animal and endows him with possibilities that exceed the physical and develop into complete and genuine manhood.

A physician cannot imbibe too much knowledge, cannot be too ardent a lover of science, but he may disregard his *latent faculty*, hide his native endowments in the blinding sunlight of popular admiration and become a failure in usefulness to the people of his community and a disgrace to his high calling. Every member of the medical profession, including its allowed specialties, should carefully maintain its etiquette and defend its honor, and build a personal character that will shed lustre upon the work of his hands, his mind, and his heart.

THE WAIL OF THE YOUNG.

By STEPHEN HARNSBERGER, M. D., Warrenton, Va.

In foro conscientiae.

The future of any people is shaped by the care and training given childhood and youth. Therefore, having had this truth constantly in mind, the writer has made it a rule to give special attention to the young from birth to adult age, a fact well-known to the communities he has served. If we do not conserve the health of children and do not infuse into their minds and hearts governing moral steadfastness, they are sure in later life to become more or less a burden to themselves and a load on society, and are laid easily corrosive to the cankers of envy and faction which are insidiously and constantly at work. Take the world today. If we except far-off Siam, business, individuals and nations are ill at rest. Dissatisfaction stalks everywhere; and, strangely enough, yet even so we find the hitherto conservative minds of the medical profession "moving contrary with thwart obliquities."

Up to the coming of the past half century, physicians, faithful to their trust, were loved for their constant, thoughful and consistent demeanor; and mothers were wont to rouse their children to look up to and emulate the controlling virtues of the old home-doctor. But pervasive negligence, if you will stop to reflect, is gradually giving form to bluff and unfeeling concern, as professional work increases and fees grow bigger; despite the established fact that kindness and sympathy is what brought the hearts of the suffering world to pay frank homage to the disciples of Aesculapius since the dawn of medical history—obviously an ominous detraction awakening the plaintive wail of the young.

It is a bad failing when the medical profession forfeits sympathy—human devotion—from whatever motive. For as human devotion wanes so will the sick and injured go out with less and less attention and the doctor with an ever-growing aimless attention. This is not alone true in civil practice—it is manifest to the observing person in military service; a thing at once preposterous and mischievous.

Of course it is fair to remark that doctors are human with human weaknesses; and, it is not just to censure all for derelictions of a minority. Still it is well, now and then, to pass these things in review, to jog our insight and refresh our memories to the advantage of keeping ourselves and our services nearer the line of duty approved by conscience and better work accomplished—*lest we all get careless.*

"Be thou as chaste as ice, as pure as snow, thou shalt not escape calumny!" But open disregard of professional courtesies is turning precedent awry and running patients from earnest and qualified public servants to the much censured chiropractors, osteopaths, and other specious palaverers. Where does the fault lie?

As far back as the eighties, I became aware of the serious substantive wrong that hinged on the almost unrestricted influx of foreigners into this country. And several times my views expressed in a newspaper were attacked and ardently opposed. The principal argument against me was that my ancestors were emigrants. That is true but it must be understood *that the emigrants of old were either skilled handicraftsmen or educated persons who came here to remain here;* and that is just what should be the status today. If we had done as our wise forefathers intended, we

would not be called upon, as we now are, to parley with Japan and other distant nations "over the way." America for Americans should be our motto. The very wording "*a home*," used by the advanced thinkers of that day, by implication, if not in plain language, adjured them and those to follow, solemnly, as if under oath, or under penalty of a curse, not to let pass this single and only safe opportunity of securing and preserving to themselves and posterity their longed for liberties.

When our forefathers established this government through trials and bloodshed, they did not purpose that there should ever be a flux of the perversive quota from the nations beyond the waters. America, especially these United States, was primarily intended for a *home* not only for their children and children's children but a *home for the oppressed* elsewhere who would come here to better their condition. to rear their families here, remain here, speak and read our language, help develop our resources—making our interest their interest; and, if necessary, fight for and protect the soil that adopted them. In other words, they were expected to become one as they were one and imbued with all the feelings, in letter and in spirit, that filled their hearts and lives.

But after a few years, as wealth began to grow and greed began to fill the minds of some, selfishness crept in and, under the plausible plea that we needed more laborers to develop the mines, etc., than the natural increase of our native and other reliable population furnished, denationalizing interests, through luring argument and otherwise (perhaps more of the "otherwise"), persuaded those higher up in representation of national affairs that the *cheap* decoy from over the way could alone care for the gain they so greedily craved. Blinded to the favorable opportunity of keeping this country "a home," the doors of entry opened and today, by reason of the presence of the thousands who are here making and piling up wealth for the few, the reliable freemen of the direct descendants of the original freemen are forced to the wall, because they cannot live and save on the scavenger diet and under the compromising surroundings of the dissentious accessions from the factious subjects of other nations. Place and opportuntiy are fostered to those who reap here and every week-end send the sheaf of profit across the way to the tills of unsympathetic foreign lands. It robs our republican sentiments, family requirements and industry of the complement which is ethically and justly our own. No wonder "The Wail of The Young" is heard far and near.

It does not seem enough that we spent our best manhood to save Europe, we seem to forget the tax and torture of the boys who lost all in the great conflict of 1918-1919. Nearly four years have passed and these suffering sons of liberty-loving America are tossed and teased by the ungrateful quiescence of a people who promised everything to induce them to leave home and mother, to protect the homes and mothers on "the other side." Sympathy and devotion ran rampant before they "signed up" and donned the color which forbade release from orders, duty and death. No wonder we hear "The Wail of the Young" from the Atlantic to the Pacific and from the Southern Gulfs to the Northern Lakes!

The old home-loving American laborer, who was contentedly helping in peace and war to make this country invincible and prosperous beyond all other countries, has been thrust to the rear by the hordes of aliens who have no sympathy with our history, institutions or integrity; who take from our law-abiding laborers what our ancestors believed would be theirs throughout time. No wonder we hear "The Wail of The Young" in righteous protest!

It is not unreasonable to think that this laxity of consideration of our present and future happiness and well-being is virtually at the bottom of most of the unrest and discontent which now broadcasts the land. It is also no doubt a factor in creating in the minds of the young a feeling of distrust and disregard for the reason that they are not dealt with on terms of equity by their own government. Their distrust has efficient cause for its being. No wonder we hear 'The Wail of The Young" on all sides.

The appointment of Dr. Sawyer, the President's family physician, as co-ordinator of the Government and the vast thousands of disabled vetrans of the World War, still further develops the stain which colors the present administration's attitude towards our youth who

gave all that was best for the honor of this people.

There is a great chasm between the calls of an old woman's attention and the enlarged, widely variant and seriously important demands of war-time practice. It is no disparagement to say that Dr. Sawyer can well fit the one but has not had the classical training which necessarily must be had in adequately caring for and directing the medical and surgical departments of military service. Had he been personally engaged in and actually familiar with the needs of the disabled soldiers, it is a wager between a straw and an elephant that he would have long since warmed up to the importunities of the visible suffering of the boys who lost all in defense of American honor; and, for the sake of forestalling future history from recording the apparent neglect of our butchered manhood who victoriously carried OLD GLORY over the formidable masonry of the offending nations. It was another mistake of our kind-hearted but myopic president. Mr. Lincoln was kindhearted but Mr. Lincoln was far-sighted—his was always a broad national view, with a vivid comprehension of the strength of love and right as an ever-acting guide.

The Man of Nazareth said: "A new commandment I give you, that ye love one another." Nothing taught or that can enter into the mind of man is of more importance than this one command. Upon it rests not only the spiritual but the temporal stability of society and nations. At the sea-side, Christ told Peter if he desired to show love for his Lord, he must "feed my lambs!" He set a child in the midst of his disciples and told them that it would be better for a man to have a stone about his neck and to be cast into the sea than to offend one of these little ones. Now what does all this mean? It means that our lives must be affirmative, active, living—*and loving*. There can be no variableness or compromise. During the plastic period preceding maturity is the molding of relationships and activities. The faith which is begotten in childhood is the greatest motive power and controlling influence in life. In worldly affairs, as in spiritual, it guides and inspires mankind. Faith is at the bottom of all meritorious conduct and effort. It was faith inspired by the declarations and call of our Congress and Senate that urged our boys to leave the ties of home and its comforts and safety to court hardships and suffering, to keep in balance the nations of Europe. The conception our youth had in the verity of the promise to all who crossed the waters left no doubt in their minds and hearts that they would be cared for in the same true and active spirit in which they responded to the "call to arms." There were no reservations,—they were told in plain English wording that they were, on their return, to get quickly and abundantly the best and lasting care that appreciation and money could command. Have they gotten it? Are they getting it? Alas, in return many are still languishing in pain and without ample food and raiment, not even provided with comfortable housing or beds on which to rest. If this government is to live, it must catch and hold the spirit of the Master in serving and not being served. The richest and most fruitful investment of this country's time and treasure *is on the young*.

The neglect of our young manhood in this country is the most fatal mistake of the times. Not only that but wisdom and inspiration come from association with them. Can we point to ourselves as a Christian people? We are closing many doors of opportunity to them when we surround them with devitalizing negligence and its degrading influences. Let us revitalize our treatment and demeanor toward these unfortunate wards of the nation, by revitalizing our politics and policies. There is danger of this country falling under the weight of its own political chicanery.

It is a sad day in this country's history when our youth lose faith. No wonder these suffering boys are discouraged and disgusted. No wonder their families, especially their brothers and sisters, are wavering in affection for a people who promised everything in advance and when the "affair" is over, refuse through lingering negligence to do anything to calm their minds, fill their veins or ease the pains that torture both body and mind by day and by night! No wonder we hear "The Wail of The Young" on every side.

We are told that this government was founded to guarantee to posterity life, liberty and the pursuit of happiness. What men clamored for in 1776, the young of 1922 clamor for now. Men then yearned to be freed from oppressive governments—the young now yearn

to be freed from mental and physical disabilities imposed by an unsympathetic government.

"In Rama was there a voice heard, lamentation and weeping." Matt. 11-18. The earnest prayer from the hearts of the young is, "Give us health and fixation of character that we may have dominion over things confused and transient." It is up to the government, the people who vote and legislate, to now come to the rescue of the young who are clamoring to be fitted for the task that is to fall to them, if they are only permitted to live in health and happiness. This era is flush with thoughts of the future. We cannot ignore it; nor can we pass it lightly. We must realize that something constructive must be done to *hold inviolable the ideals of our fathers.*

The sacrifices and heart influences of mothers in the days gone by made men and women whose works were guided by the promptings of conscience and 'trust in God." We cannot "legislate Sanctity" into humanity, to quote another. Reforms, or the doing away with the need of reforms, must begin at the Christian mother's knee, be cultivated in the schools and nurtured to full efficiency in the churches. The front pews in the churches, not way back, are perfect molding places for the young and old every Sabbath and every week-day service. Begin early and the habit will hold true to the acknowledgment now as it did in the days of our noble and faithful fore-fathers, notably the Puritans. Some can perhaps remember when people went to church to worship; now the fewer numbers who go to church go more often for less worthy reasons. People today lack that eagerness for spiritual gain which so forcibly marked the lives of past generations. As we increase the means that light our way with artificial lights, it seems that we feel less in need of the true spiritual light. Let the churches get awake and take on new life in the interest of the Master. The young are knocking at the doors of every heart; harbor them, instill in them an idea, an ideal, a hope that they may develop and fix within themselves the only enduring "life-buoy" character and vision. *We owe it to them.*

It has been said that "verse embalms virtue," therefore, *let us learn* to say as Milton versed:

"His starry helm, unbuckled, showed him prime
In manhood, where youth ended."

We owe it to them.

"Ill fares the land, to hastening ills a prey,
Where wealth accumulates and men decay."

"There isn't a boy but wants to grow
Manly and true at heart.
And every lad would like to know
The secret we impart.
He doesn't desire to slack, or shirk—
Oh! haven't you heard him plead?
He'll follow a man at play or work,
If only the man will lead.

"Where are the men to lend a hand?
Echo it far and wide,
Men who will rise in every land,
Bridging the 'Great Divide.'
Nation and flag and tongue unite
Joining each class and creed.
Here are the boys who would do right
But where are the men to lead?"

Proceedings of Societies

Report of Delegates from Virginia to the American Medical Association Meeting.

The St. Louis meeting of the American Medical Association was largely attended, the recorded number being 5,174.

The most elaborate arrangements made by a splendid organization of the doctors of St. Louis and their wives, left nothing undone to care for the convenience, comfort and pleasure of the visiting throngs.

The exhibits from various clinics, and business houses, were of a high class of excellence.

The fifteen sections of the Scientific Assembly with a large variety of high class papers, had well attended and enthusiastic meetings.

Virginia's delegation was not as large as it should have been. Those who attended were deeply impressed by the magnitude and vital importance of the work of the Association and greatly pleased with the systematic and thorough manner in which its intricate affairs were conducted.

The House of Delegates was composed of representatives from forty-four States and the District of Columbia, from the fifteen Scientific Sections, from Hawaii and Porto Rico, and from the Army, Navy, and Public Health Service.

The body was presided over by a speaker elected from its membership. Its regular sessions covered Monday and Tuesday mornings, and Thursday afternoon, during which time an enormous amount of work was accomplished.

All matters coming before the House, most of it in printed form, and including reports of officers, councils, and committees, and also new business, were referred without debate to nine reference committees.

These reference committees, after fully considering the various items, compiled their reports, which came back to the House on Tuesday and Thursday, and were then discussed and duly disposed of.

In the reports of the officers it was disclosed that the present membership of the Association is 89,048, with a fellowship of the Scientific Assembly of 53,022 each showing a substantial increase over the previous year.

The splendid quarters of the organization in Chicago are being enlarged by a substantial addition.

The trustees were authorized to reduce the dues as soon as feasible.

A magazine for lay readers is being arranged for and will appear soon after the first of the year. This will be a great help in the fight against all forms of Quackery.

A committee of prominent surgeons was appointed to prepare material for instruction of the medical profession on Cancer Education.

The report of the Council of Medical Education showed that in 1906 there were 162 medical colleges in the United States, more than in all of the rest of the world. By consolidation and elimination, the number has been reduced to eighty-two, with a much higher standard of teaching and greatly improved facilities.

The Council finds certain problems facing the profession as follows:

1. Medical Schools are not able to take care of all applicants.
2. The cost of medical education has greatly increased.
3. There is an increased tendency to specialization.
4. There is a shortage of general practitioners.

It is suggested that the schools should give a more general training to the students and rely on the post-graduate institutions for the training of specialists.

There is no general shortage of doctors.

Investigation shows that there is an over-supply in the cities with a correspondingly small number in the rural districts, sixty-three per cent. being in cities of 5,000 population and over and only thirty-seven per cent. in communities of less than 5,000.

There is no call for special methods to swell the ranks of the profession, and no need for retrogression in educational standards.

There are several causes for the move of doctors from country to city, among which may be cited (a) less sickness on account of better sanitation, (b) better class of patients by the aid of good roads and improved transportation go to cities for much of their medical attention, (c) this leaves the country doctors with only emergency and poorer patients and, therefore, (d) they receive minor income for maximum efforts, (e) country doctors also prefer moving to cities on account of conveniences and facilities.

This presents an economical problem which must be worked out. Better roads, better facilities, and better pay will aid in the solution.

The various State Boards are urged to require a one-year compulsory hospital service.

On the question of the use of alcoholic liquors in medicine, the House reversed its former action, and passed a strong resolution calling on the National Authorities, to so modify their ruling as to permit more discretion on the part of doctors in prescribing.

A strong protest was made against training of ex-soldiers in Chiropractic humbuggery.

The House went on record as opposing all forms of State Medicine, except the work of the Army, Navy, and Public Health Service and that necessary for the control of communicable diseases and treatment of the mentally deficient and indigent.

A resolution was adopted opposing the Sheppard-Towner bill.

Considerable attention was paid to the question of periodical medical examinations of supposedly healthy persons and it was suggested that regular forms be provided and that the various local societies notify the public as to the advisability of such examinations by competent physicians.

A commission was authorized to collect and disseminate reliable data and information in regard to the methods of the various systems of drugless therapy, such commission to be composed of representatives from the American Medical Association, Carnegie Foundation, The Association of American Universities, National Educational Association, and Federation of State Medical Boards.

Congress was urged to provide for the proper pensioning of disabled medical reserve officers.

A resolution was passed approving the formation of a Woman's Auxiliary of the American Medical Association, which carries with it also the formation of branch organizations in the several States with units in cities and counties.

After a close contest between San Francisco and Atlantic City, the House of Delegates decided to hold the 1923 meeting in the former place.

Respectfully submitted,

SOUTHGATE LEIGH
J. T. BUXTON

Delegates.

Medical Society of Virginia.

REPORT OF CONFERENCE COMMITTEE APPOINTED AT THE LAST MEETING OF THE MEDICAL SOCIETY OF VIRGINIA, TO CONSIDER THE NURSE SITUATION IN THE STATE, WITH A LIKE COMMITTE FROM THE STATE NURSES' ASSOCIATION.

This Conference Committee, composed of representatives from the Medical Society of Virginia and the State Nurses' Association, held four meetings, and disscussed, in all its phases, the present status of nursing in the State of Virginia, regarding both the feasibility of reducing the Nurse-Training Course and the law recently enacted regarding Licensed Attendants.

It was resolved to do nothing with the present established Nurse Training-Course, but as the new law regarding Licensed Attendants was only a skeleton one in its requirements, and as the State Board of Nurse Examiners was the only legal medium through which it could be put into operation, the Committee voted to submit to the State Board of Nurse Examiners for the use of any hospital desiring to establish a school for Licensed Attendants, the following recommendations, after having gone on record as favoring the establishment of schools for Licensed Attendants, and approving the law passed by the recent Legislature:

1. It recommends that the duration of the course be one year, of twelve months, all of which shall be served in the same hospital, at the end of which time, if the work has been satisfactory to the authorities of the hospital, the pupil will receive a certificate as trained attendant, which entitles the graduate to take an examination before the State Board of Nurse Examiners, which, if passed, entitles her to a certificate of "Licensed Attendant";

2. Schools of this kind to be opened in any hospital of ten beds or more, but recommends that this course be not given in hospitals which are now conducting a successful school for regular trained nurses;

3. A school of this kind must be supervised by at least one graduate nurse;

4. Pupils must be between the ages of 18 and 45, giving evidence of good moral character, physically able, and a preliminary education equal to the eighth grade in the public schools;

5. Classes may be formed twice each year, with one month probation period;

6. Hospitals to furnish living expenses, uniforms, books and an allowance of not less than $5.00 per month;

7. This Committee recommends to the physicians

of the State of Virginia and the nurses of the State, and the public in general, that the pay for Licensed Attendants be not more than $18.00 per week;

8. It is recommended that a special uniform be designed and copy-patented, and used throughout all the schools in the State, and used after graduation;

9. The course of study to include the following:

a. Qualifications, deportment and personal hygiene;

b. General hygiene, care of the home, cleanliness, ventilation, sanitation, disposal of waste, germ theory, household and sick room.

c. Food, care and preparation, plain cooking for the family and the sick;

d. Ethics, etiquette of the sick room, adaptability to sick room and the family;

e. Everyday care for the sick: Bed making, lifting, moving, rubbing, special arrangements for comfort, prevention of bed sores, cleansing and sponge baths;

f. Methods of disinfection and sterilization of utensils;

g. Temperature, pulse, respiration, observation of urines, defecations, record keeping, etc.;

h. Treatment: Enemata, douches, catheterization, fomentation, poultices, etc.;

i. Giving of medicines, and instructions regarding antidotes for common poisons;

j. Care and feeding of children, well and ill;

k. Elementary nursing in maternity cases;

l. Special invalid cooking and serving of food;

m. Bandaging;

n. Emergencies, medical and surgical;

o. Text book recommended: "Practical Home Nursing" by Louise Henderson, R. N., Published by the MacMillan Company, New York City.

J. ALLISON HODGES, M. D.
Chairman.

R. C. FRAVEL, M. D.
Secretary.

June 21, 1921, Richmond, Va.

The Virginia State Board of Medical Examiners,

At its semi-annual meeting in Richmond, in December, granted licenses to practice medicine in this State to the following:

Dr. Joseph Coates, Richmond, Va.

Dr. Christopher C. Cooke, Richmond, Va.

Dr. Dorothy Edwards, Norfolk, Va.

Dr. Vernon L. Eley, Woodland, N. C.

Dr. Katharine Havard, Norfolk, Va.

Dr. Bayard Taylor Horton, Charlottesville, Va.

Dr. William Banks Huff, Roanoke, Va.

Dr. William Irwin Prichard, Brooklyn, N. Y.

Dr. J. Judson Sale, Fredericksburg, Va.

These represented six schools of graduation, there being two each from the Medical College of Virginia, University of Virginia, and Cornell University, and one each from Jefferson Medical College, University of Maryland and Howard University.

The following were licensed through reciprocity:

Dr. E. H. Alderman, Williamsburg, Va.

Dr. James Augustus Bailey, Cape Charles, Va.

Dr. M. Stone Duling, Boissevain, Va.

Dr. Lee Andrew Gill, Washington, D. C.

Dr. Albert Earle Holmes, Salem, Va.

Dr. Henry Clay Lacy, New Brighton, Pa.

Dr. Arthur Wells Lowman, Stonega, Va.

Dr. Floy Emogene Lyon, Burkeville, Va.

Dr. Helene Soetch Michel, Blacksburg, Va.

Dr. Frank Moseley, Williamson, West Va.

Dr. W. W. Rowan, Andover, Va.

Dr. E. R. Stillman, Goshen, Va.

Dr. M. H. Williams, Roanoke, Va.

Dr. James F. Williams, Richmond, Va.

The Albemarle County Medical Society,

At its annual meeting, elected Dr. H. S. Hedges, president, Dr. John H. Neff, vice-president, and re-elected Dr. F. C. McCue secretary-treasurer. All are of Charlottesville.

Analyses, Selections, Etc.

Bacterial Endocarditis as a Sequel to Syphilitic Valve Defect.

From the Department of Medicine, University of California Medical School. Briggs reports a case of patient suffering from typical syphilitic aortitis. One year later the patient enters the hospital with a non-hemolytic streptococcic endocarditis which pursues the usual course and terminates in death. Necropsy shows involvement of the aortic ring, together with an acute verrucose endocarditis of all the aortic cusps and perforation of one, with an extension into one mitral leaflet.

From a study of the literature it seems that the sequence of bacterial endocarditis on a syphilitic endocarditis is a decided rarity. (LeRoy H. Briggs, American Journal of the Medical Sciences, August, 1922).

Diagnosis of Early Syphilis.

From the Section on Dermatology and Syphilology, Mayo Clinic and the Mayo Foundation.

A study of 231 cases of early syphilis, largely untreated, yields the following observations bearing on the diagnosis of early stages of the disease.

1. The diagnosis of early syphilis has be-

come a laboratory problem, divided between the dark-field examination and the Wassermann reaction. Clinical criteria, while interesting, have lost most of their final diagnostic value. The primary stage especially should no longer be overemphasized in teaching.

2. The dark-field examination showed fifty-five to sixty-five per cent. of all genital lesions to be chancres outright.

3. In our consecutive series, irrespective of age, sixty-six per cent. yielded positive dark-fields; eighty per cent. were positive the first week and none were positive after the ninth week.

4. Seventy per cent. of the Wassermann tests made in the second week of the chancre were positive.

5. The dark-field detected spirochete pallida in twenty-three of the twenty-four moist secondary lesions, and in five of seven Wassermann negative, early, or recurrent secondary cases.

6. The dark-field on treated primary lesions is not hopeless. Eleven of seventeen cases yielded positives. Nonetheless the with-holding of treatment until after repeated negative dark-field examinations needs to be vigorously preached.

7. Glandular aspiration of the satellite bubo of the chancre with dark-field examination of the serum yielded fifty per cent. positives.

8. Of eighty patients who previously had seen physicians we found that only three had had dark-field examinations, one army man, one navy man, and one civilian.

9. The practitioner's margin of error in diagnosis was thirty per cent. In twenty-four per cent. treatment of some kind had been instituted while no diagnosis had been given the patient.

10. "Chancroid" is still the chief diagnostic pitfall. The attitude that every genital lesion is potentially a chancre until proved otherwise is the safest for public and patient. Diagnosis of chancroid should not be made until four months after the appearance of the lesion and following repeated negative Wassermann tests. "Cancer," "tumor," herpes," "felon" are the masquerades of extragenital chancres.

11. One patient had been used as a transfusion donor before coming to the clinic, while he had a chancre, and was at the height of his spirochetemia, and ten days before his secondary eruption appeared. The physician who used him as a donor had evidently made no inquiry into his condition.

12. The Wassermann test in our secondary cases yielded the following: 92 per cent. positive in treated and untreated; 95.7 per cent. positive in those with slight treatmen.; 98.5 per cent. positive in those without treatment.

13. We believe the repeated positive Wassermann test in secondary syphilis is a safer guide for the inexperienced than the characteristics of the eruption. If it is negative, the dark-field or the combination of findings may make the diagnosis.

14. In the aggregate twenty-four per cent. of patients with florid secondary syphilis, a high percentage could give no history of chancre, even though their secondaries were fully developed. This included a physician with secondaries, but no sign of a primary lesion (needle prick?).

15. Women are especially apt to give no sign of a primary lesion (concealed, short duration, and so forth).

16. Macular eruptions preponderate in our secondary cases. This we believe is an effect of special attention to lighting on our part, and is of great importance where inspection is used as a clue to syphilis as in industrial and military hygiene.

17. More than half of our patients had infectious lesions when seen (sixty-eight per cent). More women than men had infectious lesions (seventy-five per cent. in contrast to sixty-four per cent.), which makes them even more effective carriers than men. In this we are in accord with Fournier.

18. Half our patients had constitutional symptoms with secondary irruptions; much fewer in the preruptive stage (four in twenty-eight).

19. Women show a markedly greater tendency to constitutional symptoms than men (sixty-three per cent. in contrast to forty-three per cent). In this also we are in accord with Fournier.

20. The leading constitutional symptoms are sore throat (fifty-three per cent.), headache and head pain (thirty-one per cent).

21. Combinations of mild fever, sweats, loss

of weight, asthenia, gastro-intestinal symptoms, nervous irritability, arthritic and myalgic pains with anemia are frequent and are easily confused with early tuberculosis. They justify a routine Wassermann test when tuberculosis is suspected, especially in early adult and middle life.

22. Myalgia, arthralgia, and bone pain are easily confused with "rheumatism." The traditional nocturnal character is not a safe guide to syphilis, and is often absent. (John H. Stokes and Albert R. McFarland, American Journal of Syphilis, July, 1922).

On the Treatment of Syphilis with Bismuth Salts.

Sazerac and Levaditi of the Pasteur Institute, Paris, have recently proposed the use of tartro-bismuthate of potassium and sodium, containing approximately fifty per cent. of bismuth, for the treatment of syphilis. In their preliminary work on rabbits they found that the only safe and efficient method of administration was by the subcutaneous or intramuscular route. Intravenous injections were shown to be dangerous on account of the markedly toxic action of the drug. In order to decrease this danger as far as possible they substituted a suspension in oil of the drug for the watery solution. This was found to be the method of choice in the treatment of human cases on account of increased tolerance and less local reaction.

Fournier and Guenot have tested the value of this treatment of syphilis on a comparatively large scale and report the results of the treatment in about 200 cases.

The authors state that bismuth is undoubtedly a most energetic anti-syphilitic agent having particularly marked effect not only on the infectious manifestations of the disease but also on the Wassermann reaction. They conclude, however, that time only will tell if this drug will prove to be of value in the radical cure of syphilis. (Editorial, signed E. P., U. S Naval Medical Bulletin, September, 1922).

Treatment of the Syphilitic Liver and Heart.

Although an ardent advocate of the use of arsphenamin in the treatment of syphilis, the author is of the opinion that it should not be used as a routine measure in treatment of cardiac and hepatic syphilis. When indicated in these two conditions it may be used with reasonable safety in those cases which have responded to a previous administration of mercury and iodide. "In mercury and iodide we have two drugs remarkably suited for the treatment of visceral syphilis. Their action is slow and this, I believe, is desirable. The syphilized liver and heart, in whatever stage of the disease, from clinical experience at least, seem to do better when the process of repair is slow and when no great strain is placed upon their normal functioning activities." (Udo J. Wile, American Journal of the Medical Sciences, September, 1922).

The Truth About Medicine

During December, the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Non-official Remedies:

Powers-Weightman-Rosengarten:
Arsenobenzol-Billon.

Merck & Company:
Digitan Ampules (for Hypodermic Use)
Digitan Ampules (for Oral Use).

NEW AND NONOFFICIAL REMEDIES.

Ven Calcium Cacodylate Ampules, ¾ grains: 1 Cc. contains calcium cacodylate-Ipco (See New and Nonofficial Remedies 1922, p. 55), 0.05 Gm. (¾ grain).

Ven Calcium Cacodylate Ampules, 1½ grains: 1 Cc. contains calcium cacodylate-Ipco, 0.097 Gm. (1½ grains).

Ven Calcium Cacodylate Ampules, 3 grains: 1 Cc. contains calcium cacodylate-Ipco, 0.195 Gm. (3 grains).

Ven Calcium Cacodylate Ampules, 5 grains: 1 Cc. contains calcium cacodylate-Ipco, 0.324 Gm. (5 grains).

Ven Calcium Cacodylate Ampules, 7 grains: 1 Cc. contains calcium cacodylate-Ipco, 0.453 Gm. (7 grains). Prepared by the Intra Products Co., Denver, Col.

Mercurialized Serum-Lederle for Intravenous Injection.—Each package contains the equivalent of 1/3 grain (0.022 Gm.) of mercuric chloride in 8 Cc. normal horse serum. The initial dose is 1/12 grain of mercuric chloride. This may be gradually increased to 1/3 grain. For a discussion of the actions, uses and dosage of mercurialized serum, see New and Nonofficial Remedies, 1922. p. 189. Lederle Antitoxin Laboratories. New York.

Silvol.—A brand of protargin mild-N. N. P. (See New and Nonofficial Remedies 1922, p. 326). Silver is a compound of colloidal silver with an alkaline proteid and contains about 20 per cent. of silver. Parke, Davis and Co., Detroit. (Jour. A. M. A., Dec. 9, 1922, p. 2001).

Arsenobenzol-Billon.—A brand of arsphenamine-N. N. R. For actions, uses and dosage, see New and Nonofficial Remedies, 1922, p. 43. Arsenobenzol-Billon is marketed in ampules containing, respectively, 0.1, 0.2, 0.3, 0.4, 0.5, and 0.6 Gm. of arsenobenzol Billon (Jour. A. M. A., Dec. 16, 1922, p. 2085).

PROPAGANDA FOR REFORM.

More Misbranded Nostrums.—The following prod-

ucts have been the subject of prosecution by the federal authorities charged with the enforcement of the Food and Drug Act: Simmons' Cough Syrup (A. B. Richards Medicine Co.) consisting essentially of ammonium chlorid, glycerin, chloroform, vegetable extract, alcohol, sugar and water, flavored with anise; Hobbs' Nerve Pills (Hobbs Spanish-American Medicine Company) consisting essentially of powdered iron, quinine. licorice, starch and traces of arsenic and strychnin; Mando Tablets (Garcey's Drug Store) containing extracts of nux vomica and damiana; Castlebarry's Sexual Pills (Allan-Pfeiffer Chemical Co.) consisting of an iron compound, extracts of Spanish fly and nux vomica, chalk and sugar; Fackler's Compound Extra of Damiana consisting of extract of plant drugs, including nux vomica, damiana and saw palmetto and also extract of Spanish fly, sugar, alcohol and water. (Jour. A. M. A. Dec. 2, 1922, p. 1949).

Neutral Acriflavine in Septicemia.—Neutral acriflavine has been used intravenously in septicemia and similar conditions, but the available evidence does not demonstrate the value of the drug in these conditions. Also, the available evidence is insufficient to judge whether the intravenous use of the drug has dangers other than those inherent in intravenous medication. (Jour. A. M. A. Dec. 3, 1922, p. 2033).

The Propaganda for Reform in Esthonia.—Physicians the world over have long recognized that the claims for proprietary medicines put forward by those who are financially interested in sale are always over-optimistic, often unwarranted and not infrequently deliberately misleading and fraudulent. It is natural, therefore, that the widespread significance of the work of the Council on Pharmacy and Chemistry of the American Medical Association should have attracted the attention of the medical profession of all civilized countries and suggested the inaugurating of similar reform. An institute for drug control has been established in the Netherlands. Efforts toward the establishment of bodies patterned after the Council on Pharmacy and Chemistry have been reported in the past from Germany, Italy and Belgium. Now comes a message from Esthonia, formerly a Baltic province of Russia, but now an independent state, that the achievements of our Council are an incentive toward the inauguration of similar work in that country. (Jour. A. M. A. Dec. 3. 1922, p. 2020).

Ferraline (Ferraline Medicine Co.), consisting essentially of iron sulphate with other iron compounds and water. Crab Orchard Mineral Water (L. H. Goodwin and Co.). a highly mineralized water, the dissolved mineral matter consisting chiefly of Glauber's and Epsom salts (Jour. A. M. A., Dec. 16. 1922, p. 2103).

Hayes Asthma Remedy.—This preparation is exploited by P. Harold Hayes, Buffalo, N. Y. Some years ago, six of the seven remedies were examined. The analysts reported one, a cough medicine, to contain oils of turpentine, peppermint, etc., emulsified and sweetened. A second contained potassium iodid. A third preparation was reported to contain potassium, sodium and ammonium iodid. A fourth preparatation contained iron peptonate. A fifth preparation consisted of capsules containing quinine sulphate. A sixth preparation consisted of pills which contained as their active constituent resin of Jalap (Jour. A. M. A., Dec. 30, 1922, p. 2248).

Two Electronic Diagnoses of Abrams.—Instead of the blood of a patient, a physician sent the blood of a guinea pig to one J. W. Eisiminger of Oklahoma City who operates a physico-chemical laboratory for the electronic reaction of Abrams. Eisiminger is an osteopath. The report received by the physician on the patient, whose history was sent in, reads as follows:

"Congenital diminished resistance, cerebro-spinal and digestive strain, 39 ohms, Metastatic Carcinoma, 6 Liver and right colon, Tuberculosis Genito-urinary tract, 6 ohms. Colisepsis, 4 ohms., streptococci, infection, 12/25 ohms. in gall bladder region."

Another physician states that he sent Eisiminger some sheep's blood on blotting paper with a blank supposedly for a fifteen year old boy. This physician received the following diagnosis:

"Congenital diminished resistance cerebro-spinal strain 38 ohms. Metastatic carcinoma of left lung and pancreas, 8 ohms. Neisserian infection genito-urinary tract, eyes, 4 ohms. Tuberculosis of genito-urinary tract, 4 ohms."

However, it is possible that these blood specimens were not taken in subdued light and that Eisiminger was not informed if the subjects had red hair nor of their religious faith, factors which are said to play an important part in diagnoses made by the Abrams method (Jour. A. M. A., Dec. 30, 1922, p. 2247).

Book Announcements

An Introduction to the Practice of Preventive Medicine. By J. G. FITZGERALD, M. D., F. R. S. C., Professor of Hygiene and Preventive Medicine and Director Connaught Antitoxin Laboratories, University of Toronto. Assisted by PETER GILLESPIE, M. Sc., C. E., M. E. I. C., Professor of Applied Mechanics, Univ. of Toronto, and H. M. LANCASTER, B. A., Sc., Director of Division of Laboratories, Provincial Board of Health, Ontaria, etc. Also chapters with appendix articles by various contributors. St Louis. C. V. Mosby Company. 1922. 8vo. 826 pages. Cloth. Price, $7.50.

Dispensary Service in the United States. Second Annual Presentation of Hospital Statistics by the Council on Medical Education and Hospitals of the American Medical Association. Dealing with Hospital Outpatient Departments and Other General and Special Dispensaries. 1922. With lists of General Dispensaries, Tuberculosis Dispensaries, Dspensaries for Venereal Diseases, Dispensaries for Nervous and Mental Diseases and Federal Dispensaries. Reprinted with editions from Hospital Number of the Journal of The American Medical Association, October 21, 1921, and August 5, 1922. Paper. 31 page. Price, $1.00

Medical Diagnosis. For the Student and Practitioner. By CHARLES LYMAN GREENE, M. D., St. Paul. Formerly Professor of Medicine and Chief of the Medical Department, University of Minnesota, and Chief of Medical Clinic, University of Minnesota Hospitals. Fifth edition revised and enlarged. 1453 and XX pages, with 14 colored plates and 623 other illustrations. Philadelphia. P. Blakiston's Son & Company. 1012 Walnut Street. Cloth. Price $12.

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Editorial

Hospitalization and Diabetes.

When one undertakes to manage a case of diabetes, the first prerequisite for the accurate control and treatment of such a case is the hospitalization of the patient. This is a prime necessity. Patients with mild diabetes, for a limited time or in a limited sense, may be, perhaps, rendered sugar-free by following oral instructions as to diet. Such patients may be given a diet prescription and may be told to follow it in the home. In some instances, by this method, a fair degree of success may be obtained. In many cases, however, little will be accomplished, except, possibly, a transient freedom from the appearance of urine-sugar to the sugar test. The home method is faulty. The opportunity for the careful instruction of the patient is lost; the accurate management of the patient is lost; the maintenance of weighed and charted diets properly increased and balanced is lost; the complete study of patients for etiology and concurrent maladies is not so well obtained. By hospitalization of the diabetics, even in mild cases, these valuable phases of management are at once covered and the patients are placed, at the end of a three or four-week-period of study, in a position for greater physical, as well as intellectual, control over the malady. Of course, the value of and demand for hospitalization of these cases is far greater in the severe or grave types of the disease.

The writer recalls a case that well illustrates the need of hospital study and management. The patient was a young married woman. She had been feeling badly. Her husband urged her to go to see her physician. On the way to "the movies," one afternoon, she 'dropped in" to see her doctor. She gave the doctor her history; he suspected diabetes; urine examination disclosed positive sugar. She was informed that she had diabetes and that she must begin treatment. She undertook, contrary to advice, the self-management of her case at home. In three days she was in a diabetic coma and, within a week after the office visit, she was dead. Such instances are rare but evils of a lesser degree are frequently experienced through the lack of hospital control and instruction in diabetes. No doubt, in this day of careful sterilization and surgical technique many operations by the surgeon might be successfuly performed and good results obtained in the home of the patient. But such an idea is no longer entertained by the surgeon or the patient. Equally important is the hospital in the management of medical cases of this sort, if good results are expected. The physician must feel the demand and register this upon the minds of diabetics. Practitioners who discover sugar in the urine during the course of an examination have a responsibility in this matter. The patient may be totally adverse to the hospital idea. Many people, it is commonly observed, entertain the queer idea that hospitals are institutions to be used by them only in the face of some "terrible surgical operation" or some emergency condition that may arise. This is an opinion which should be combated by instruction and teaching. Hospitals are equipped for more accurate and successful fight against disease, and in no instance of constitutional and metabolic diseases is the use of a hospital more important than that of diabetes mellitus. Here is found the dictitian with her equipment for measuring and weighing the diet. Here is found the laboratory equipment for examination of the urine, the blood, the gastric and duodenal contents, the alveolar air, the metabolic rate, and the roentgenological examinations that may be needed. Here the patient is under control and daily observation.

Here the patient is protected for a time from the pitfalls of a weak resolution. Here the patient is instructed in the dietary management, as well as led into the philosophical attitude of resignation to a life based upon limitations of diet.

The Internist—The Dentist and Focal Infection.

After ten years of work in the field of oral sepsis, in its relation to systemic diseases, after a decade of direct and earnest effort to evaluate the real significance of the etiologic relationship of oral infection to general diseases of the body, it can now be stated that the relationship of cause and effect has been established beyond reasonable question, and that, in consequence, the dentist and the internist have found common ground of understanding in their inter-related fields of work. And this mutual understanding has been greatly enhanced by conference groups in clinics and by discussions in joint meetings or symposiums. This start must be increased. Specialists of all sorts must intermingle. The whole future of medicine, both for the profession and the public, depends upon the co-operation of specialists.

In order to increase this co-operation, in the matter of focal infections and systemic diseases, the dentist should have a "look in" upon the gross evidences of disease in the body when such is due to infection of teeth. He should be shown the results obtained after the removal of infected teeth. This is quite necessary, as a procedure, if conviction is to be produced generally in the mind of dentists.

Pain has been all too long accepted as the measure of infection or, at least, as a criterion for vigorous treatment and removal. No longer must pain be relied upon to serve as a sole guide in this matter. Because, it happens very often, that there is no pain in places of most serious systemic infection. The dentist and the internist cannot depend upon the subjective symptom of pain. The symptom-group that may be set up by focal oral infections of the jaw should be known to both. The call of the symptoms that emanate in and about diseases of the joints (acute arthritis, acute rheumatic fever, hypertrophic osteo-arthritis), of the diseases of the respiratory tract, including the nose, paranasal sinuses, larynx, trachea, bronchi, lungs and pleurae; of diseases of the circulatory organs (myocarditis, endocarditis, muscular irregularities of the myocardium, and hypo- and hyper-tension of the blood pressure); of diseases of the blood (anemias); of diseases of the digestive tract (gastritis, ulcer of the stomach, gall tract infection, and appendicitis); of the diseases of the kidneys (nephritis and pyelitis); of the diseases of the nervous system (meningitis and neuritis;) of the diseases of the glands of internal secretions (goitre, diabetes, etc.); the call of such symptoms, to repeat, should be understood alike by the dentist and the internist in the relationship of cause and effect. The disturbance of function of systemic organs is often due to some cause very remote from the site of maximum intensity of symptoms. The internist may, by chance, be the first to observe the systemic side and seek the aid of the dentist to find and remove the cause; often the opposite condition exists, the dentist may be first consulted and he should direct the patient to the internist for a general study and alleviation of secondary pathology.

Shortness of breath should be taken by the dentist and all specialists as an extremely important symptom. Patients complaining of, or displaying evidence of, shortness of breath, should excite in the mind of dentists and specialists the keenest interest. Patients who declare, without inquiry or solicitation, that they suffer from breathlessness are, indeed, subjects worthy of the keenest scrutiny of the most careful sort. Dentists may well heed the warning of the internist to search carefully for focal infection in patients presenting this symptom; they may likewise conclude that patients presenting symptoms of this kind have an advanced pathology. One's thought naturally turns to the respiratory system for the allocation of the origin of shortness of breath, but it is frequently true that the location is in the defective heart or cardiovascular-renal system.

In adults, shortness of breath, when it results from diseases of the heart and in association with long standing oral infection, betokens, in most cases, with a negative history of rheumatism and a negative Wassermann, a grave heart or cardiovascular-renal condition.

But the condition is not hopeless. The discovery of a cause, which may be removed, may be the means of obtaining an improvement in the course of time. The writer has frequently seen, marked or unexpected improvement in cardiac function in cases where the focal infection was the cause of the trouble after its removal.

Good Roads! Good Roads!! Good Roads!!!

In Kentucky, one-third of the representatives in the Legislature are physicians, it is reported. As a consequence, the doctors of Kentucky have an influence for good that is potential. Why should not doctors serve in the state law-making body? Is there any class of men or profession more intimately in touch with the people? Is there any group of citizens that knows more of the needs or wants of the State? No, the doctors, by the very nature of their calling and daily duties, are in best position to know what is needed.

The physicians of Virginia may well consider an organized effort looking to the bringing forward as candidates for the next Legislature, physicians who are fitted to serve in this law-making body. Physicians from each representative section should concentrate upon one of their number and urge him to come out as a candidate. The doctors of Virginia have been all too backward in public matters. Lawyers, and even preachers, of late years, have apparently taken more active part in politics and political questions than have doctors. The doctors' work and service is intimately connected with and dependent upon good roads. On this great public need, Virginia is far behind her neighbor-states. The highway problem is inter-linked with health problems, with education problems, with business problems, with welfare problems, and with religious problems. The doctors of Virginia should organize and enter actively in the practical side of politics, with a view of bringing forward doctor-candidates for the next Legislature (1924). Let Virginia follow the example of the daughter-state, Kentucky.

The extra session of the legislature is about to meet for the purpose of considering the Good Roads Problem of Virginia. The doctors of Virginia may be an influence in helping the representatives to arrive at a proper solution of the question of funds. The three thousand miles of highways in Virginia cannot be built without money. You may have the best expert advice and the most skillful organization for highway building, but little can be accomplished without an adequate amount of money. There is no sense in dodging the issue. The money must be secured. If Virginia is to progress and win the greatness in material, cultural and spiritual progress which she justly deserves, her sons must pay the cost in dollars and cents. The cost of the three thousand miles of highways yet to be built is variously estimated, says an authority, from $50,000,000 to $120,000,000. But by others it is considered that $75,000,000 will be sufficient, calculating the cost at $25,000 per mile at an outside figure.

The present State income for road building amounts to $3,577,000. It is easy to see that at best it would take over twenty years to complete the present road system with this limited annual outlay. Now, if a one cent gasoline tax, yielding $833,000 is added, it would take seventeen years; if a three cent gasoline tax were added, it would take twelve years. But, can Virginia afford to wait? In five to six years, in the hands of men accustomed to big jobs, the highway system of Virginia can be built, it is estimated, at an annual expenditure of $15,000,000.

Now, these appear to be the main facts. The question is how to get the money and then to build the roads right and maintain them, and let this and succeeding generations pay for them.

A day or so ago, a farmer brought his crop of tobacco to market in Richmond. On the way, his car was mired in a mud hole. He broke an axle and wore out a tire, trying to get out of the hole. His tobacco brought him about $200 and it cost him about $50 in automobile repairs. This is the sort of tax that keeps us poor and takes the spirit out of men.

The following plan seems a fair way to get the money: "Increase the tax for roads sufficiently to bring in half of the needed fifteen millions annually and provide for a sinking fund and interest on the bond issue of thirty-five million to complete the present road system in five years." A tax of approximately two mills on property would suffice to ac-

complish the desired result, it is estimated. The present income for roads is:

Mill tax	$1,775,000
Federal aid	971,000
Direct appropriation	204,000
Overhead appropriation	285,000
Convict and road force	342,000
Total	$3,577,000

News Notes

Training for Public Health Officers and Sanitary Inspectors at the University of Virginia.

Readers of this Journal will be interested in the announcement made in the advertisement of the Medical Department of the University of Virginia, that in addition to the regular fourth year medical course, the University has undertaken to provide training for health officers and sanitary inspectors.

The recent combination of all public health work in Albemarle County, the City of Charlottesville, and at the University of Virginia under one full-time health officer provides the University of Virginia with unique facilities for practical training in public health and sanitation. The Albemarle County Health Unit has been in successful operation under Dr. W. S. Keister for three years and has established its reputation as one of the best—and perhaps the best rural health unit in the State. This unit has now been combined with the health departments of Charlottesville and the Univeristy, so that the University has in successful operation at its very doors the means of giving practical training in the kind of health work which the South especially needs.

Although the general principles of public health and sanitation are the same in cities and in rural districts, each of these two locations presents its own problems, and special training for each kind of work is highly desirable. A health officer whose experience is limited to a large city may find it difficult to adapt himself to rural work, and the work of a sanitary inspector on the east side of New York City would differ considerably from that in a Virginia town or county.

The South is chiefly a rural section. Its public health problems are those of the country rather than those of the city.

We congratulate the University of Virginia on seizing the opportunity for service to the State which is presented to it. We also congratulate the County of Albemarle and the City of Charlottesville in adopting the far-sighted policy of uniting with the University so as to combine their public health work with the work of instruction by the University of Virginia. Precisely the same thing is true here as has been abundantly proven true in teaching hospitals. Not only are the medical students benefited by their hospital study, but the hospital is more than repaid by the service which these highly trained medical students render as "clinical clerks." The same thing must be true in the teaching of public health and sanitation. Albemarle and Charlottesville will have a better health department because it is a teaching health department, and the University will have a better health school because it has at its doors a field clinic in which to bring its students into first hand contact with rural health problems, and also to train them for their future profession.

For the present, two courses of practical training are offered by the University of Virginia:

First, a 12 weeks' course for graduates in medicine who desire practical training for the duties of a health officer in small towns and in rural districts.

Second, as 10 weeks' course of training for those with a high school education and preparing for positions as sanitary inspectors with county boards of health.

Roanoke Doctors Active for Next Meeting.

Roanoke doctors have had several meetings to arrange for the next meeting of the State Society and have appointed committees to look after the various details. The General Committee is composed of Drs. John O. Boyd, chairman, Alfred P. Jones, secretary, T. Allen Kirk, H. B. Stone and W. B. Porter.

The following sub-committees have been appointed, the first named being chairman of his committee:

Finance—Drs. Claud Moore, Paul Davis and E. H. Luck.

Hotels—Drs. Elbyrne Gill, E. H. Luck and Ira Hurt.

Meeting and Committee Rooms—Drs. J. D. Willis, S. B. Cary, R. L. Mason, E. L. Sutherland.

Entertainment—Drs. J. T. McKinney, M. R. Faville, G. M. Maxwell.

Exhibits—Drs. W. L. Powell, T. D. Armistead and W. W. S. Butler, Jr.

Publicity—Drs. J. W. Preston, J. F. Armentrout and E. P. Tompkins.

Reception—Drs. H. H. Trout, I. E. Huff, S. S. Gale, Geo. Lawson, W. R. Whitman, R. H. Garthright, J. R. Garrett, and W. B. Foster.

Badges—Drs. George Hooker, Geo. A. Kolmer and J. C. Darden.

Automobiles—Drs. George Hurt, R. H. Dubose, H. H. Trout and W. L. Powell.

Golf Tournament and Use of Golf Greens—Drs. M. R. Faville, S. S. Gale, Geo. Lawson and Alvah Stone.

Scientific Exhibits—Drs. W. B. Foster, Littleton Davis, E. E. Watson, J. B. Nichols and D. E. Remsburg.

Ladies—Mrs. J. W. Preston, chairman.

The Virginia Tuberculosis Association,

At a meeting of its Executive Committee on February 3rd, adopted the following program of work for the ensuing year:

1. Establishment of permanent tuberculosis clinics in co-operation with the State Board of Health.

2. Publicity and general educational work in the interest of municipal and regional sanatoria.

3. Children's work; Scales for the public schools, and Nutritional work (Emerson's).

4. Educational work leading to the establishment of public health nurses.

5. Co-operation with institutions for the care of destitute children in the state in the work for the prevention of tuberculosis.

6. Survey of industries of the state to determine to what extent medical and nursing service is being used and to stimulate such where absent.

California Meeting of A. M. A.

California invites you to attend the American Medical Association Convention in San Francisco, June 25 to June 29, 1923. You are also invited with your families and friends to attend the California State Medical Association meeting in the same city, the Friday and Saturday before the American Medical Association holds its convention. Some five or six other National and District Medical Associations will meet in San Francisco between June 21 and June 30. Our readers are not only urged to attend, but to spend their vacations in California. Through contacts with various financial, civic, tourist and automobile agencies, upon request, the committee will assist you in planning your trip, in making you comfortable while at the Convention, in arranging side trips of any length or character, and in any other way acting as your host while in that state.

Arrangements are being made for a number of automobile caravans from eastern points to San Francisco. From early information, it seems that this is going to be a popular method of crossing the continent. If you and your friends desire to go by automobile, the committee will assist you from the moment you leave home until you get back. If you plan to go any other way, write for information, in making your arrangements. You are requested to write to Dr. W. E. Musgrave, 806-9 Balboa Building, San Francisco, for any information of whatever character about this Convention, or about vacation opportunities anywhere in California.

Japanese Medical Commission to Visit United States.

It is announced through the Rockefeller Foundation that a Commission of six Japanese doctors, appointed by the Japanese Minister of Education, will arrive in the United States early in March, as guests of the Rockefeller Foundation, for the purpose of studying American and Canadian medical institutions and methods. The Commission, as a whole or as individual members, will visit the leading hospital and research centers in the United States and Canada, including New York, Philadelphia, Baltimore, Boston, St. Louis, Cleveland, Chicago, Rochester, Minn., Montreal and Toronto.

The Japanese have made notable contributions to the progress of scientific medicine and this visit will give to American medical men an opportunity for exchanges of ideas with a group of scientists whose medical researches have given an international reputation to the hospitals and institutes with which they are associated.

The Kanawha (W. Va.) Medical Society,

At its annual meeting recently, held at Charleston, W. Va., elected the following officers for the ensuing year: President, Dr. Geo. H. Barksdale, Charleston; vice-president, Dr. Raymond H. Dunn, South Charleston; secretary-treasurer, Dr. Wm. P. Black, Charleston. Drs. Benj. S. Preston, Peter A. Haley and C.

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A. Lay were named on the board of censors. The following were appointed delegates to the meeting of the West Virginia State Medical Association, to be held in Beckley in May: Drs. Martin V. Godbey, John E. Cannaday, Walter W. Point, R. H. Walker, G. C. Robertson, and Wm. A. Thornhill.

The Kanawha Society, with a membership of 141, is the largest local society in West Virginia.

Dr. H. M. Miles,

Of Norton, Va., is doing post-graduate work in diseases of the eye, ear, nose and throat, at the New York Eye and Ear Infirmary and at Roosevelt Hospital.

The Southern Public Health Laboratory Association

Will hold its annual meeting in Richmond, March 23rd and 24th. This Association is composed primarily of the laboratory directors of the Southern States, but is, also, always attended by many others interested in public health laboratory work. Mr. A. H. Straus, of the Virginia State Board of Health Laboratory is secretary, and he will be pleased to send a program and further information to anyone interested.

The meeting last year was held in Jackson, Mississippi, and the year before in Atlanta, Georgia. The programs at these sessions were about equally divided between scientific and administrative problems. This same general policy will be followed this year.

Dr. Tom A. Williams,

Of Washington, D. C., by invitation, delivered an address, January 15, to the alumnae, faculty and students of Randolph Macon College, Lynchburg, Va., his subject being "The Management of the Emotions in Youth."

Dr. James B. Stone,

Formerly of Pittsylvania County, Va., who graduated in medicine from the University of Virginia in 1919, has located in this city, at 2024 Park Avenue, and will limit his practice to the diseases of infants and children. Dr. Stone served as interne at Bellevue Hospital, New York, from July, 1919, to January, 1922, when he was appointed resident physician for the Children's Medical Division. After a year's service in this capacity, he located in Richmond in January.

The American Congress on Internal Medicine

Will hold its seventh annual Clinical session in the amphitheathres, wards and laboratories of the various institutions concerned with medical teaching, at Philadelphia, Pa., beginning April 2nd, 1923.

Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session. Dr. Sydney R. Miller, Baltimore, is president.

Address inquiries to the Secretary-General, Dr. Frank Smithies, 1002 N. Dearborn Street, Chicago, Ill.

Dr. W. H. Dulaney,

Lynchburg, Va., has been re-elected surgeon to the Garland-Rhodes Camp, Confederate Veterans, of that city, for the ensuing year.

Married.

Dr. Robert Hall Harrington, of Major, Va., and Miss Ruth Ione Hammond, of this city, December 23, 1922. Dr. Harrington graduated from the Medical College of Virginia last June and is at present an interne at the Memorial Hospital, Richmond.

Dr. Henry Tayloe Compton and Miss Sarah Millburn Walthour, both of Savannah, Ga., January 24. Dr. Compton is a member of the class of '17, University of Virginia, Department of Medicine.

Some Doctors Noted Among Bank Directors.

In the annual meetings of officers and directors of banks, the following doctors are among those noted as directors in some of the Virginia banks: Dr. William P. McGuire, Winchester; Dr. W. R. Cushing, Dublin; Dr. William F. Drewry, Petersburg; Dr. D. L. Elder, Hopewell, and Dr. Joseph A. Rucker, Bedford.

Dr. Henry Clay Carson,

Recently of Dunbar, Va., has moved to Osaka, Va., where he succeeds Dr. H. H. Webb.

Dr. J. G. Bentley,

Has just returned from New Orleans, La., after taking several weeks post-graduate work at Tulane University. Accompanied by his family, he made the trip west and back by automobile.

New York Aceademy of Medicine to Have New Home.

The New York Academy of Medicine has purchased the southwest corner of Sixtieth Street and Park Avenue, facing 100 feet on each street, for the erection of a new home. It is stated that they will have generous backing in this project. It is planned to commence

work on the new building in the autumn and it will have ten or twelve stories. Every facility possible will be furnished the doctor for post-graduate work. The library, already the second largest medical library in this country, that of the Surgeon General in Washington being first, is to be much enlarged. Last year, the library of the New York Academy of Medicine had 34,000 readers and the number is rapidly increasing.

Dr. E. H. Heaton,

Of Paeonian Springs, Va., is taking a course at George Washington Hospital, Washington, D. C., in clinical diagnosis and laboratory technique. Upon completion of this course, he will take charge of this special work at the Loudoun Hospital, Leesburg, Va.

Dr. and Mrs. John F. Armentrout

And daughter, of Roanoke, Va., have returned home after a visit to Richmond.

Dr. E. L. Kendig,

Victoria, Va., was in Richmond recently on business.

Dr. Lawrence T. Price,

Of this city, has been elected president of the Richmond Chapter of the Virginia Polytechnic Institute Alumni, for the present year.

Dr. Stuart McGuire,

Richmond, was among the visitors who addressed the North and South Carolina Division of the American College of Surgeons, at its meeting in Columbia, S. C., early this month.

The Crawford W. Long Memorial Association

Has been organized in Atlanta, Ga., to raise funds with which to erect a statue of Dr. Long, the founder of surgical anesthesia, in the National Hall of Fame, Washington, D. C. Dr. Frank K. Boland is president of the Association, and Dr. Wm. J. Blalock, president of the Fulton National Bank, of Atlanta, is treasurer. Only $3,000 of the necessary $10,000 had been secured to the middle of January.

Tri-State Medical Association of the Carolinas and Virginia.

The annual meeting of this Association is near at hand, the dates being February 21 and 22; the place, High Point, N. C.; the president and secretary, Drs. S. S. Gale, Roanoke, Va., and James K. Hall, Richmond, respectively. This, like all "Tri-State meetings," is going to be interesting and pleasant and a large attendance is anticipated. The session on the first evening is to be open to the public. There are to be three symposia, the subjects being "Cancer," "Pneumonia" and "Mental Diseases." Invited guests include Drs. Henry A. Cotton, Trenton, N. J.; Jas. B. Murphy, Thos. W. Salmon, Wm. W. Herrick and Russell Cecil, New York City, and Carl Hedblom, Rochester, Minn. There are forty papers on the program.

Dr. James McLean Rogers,

After a leave of absence spent at his home in Amelia, Va., has returned to Soon Chun, Korea, Asia, where he is working as a medical missionary. Dr. Rogers has many friends in this section, having graduated from the Medical College of Virginia in 1917.

Dr. Thomas D. Jones,

Of Richmond, has been in New York since November 1st, taking service at the Post-Graduate, Babies' and Willard Parker Hospitals. He will remain in New York until June 1st, when he will take an appointment on the Floating Hospital, Boston, for the summer months. Dr. Jones now plans to return to Richmond about September 1st and take offices in the new Medical Arts Building at Second and Franklin Streets. He will limit his practice to pediatrics.

Dr. John A. Pollard,

Formerly of Huddleston, Va., has moved to 101 College Street, Lynchburg, Va.

Dr. J. J. Anderson,

Irwin, Va., accompanied by a friend, is enjoying a motor trip of several weeks, visiting the various cities and resorts in Florida.

State Health Legislation.

Last year the U. S. Public Health Service and the National Health Council listed some 350 health bills, which were introduced in the 1922 legislatures of ten states. This year the legislatures of forty-two states will be in session and it is apparent that many bills relating to health measures will be introduced.

While we are striving to amend our Medical Practice Act in Virginia, so as to rid the public of the work of charlatans and quacks, we regret to note that a bill has been introduced in the House of Representatives in Nebraska which "Would permit duly licensed physicians of any school or system of healing, including religious, to treat patients in institutions receiving support from city, county, or state."

Reorganization of Federal Health Activities.

We note from the *Journal of the A. M. A.*,

that a conference was held in Washington, D. C., January 17, in the office of the Brigadier General C. E. Sawyer, chief co-ordinator of the Federal Board of Hospitalization, to consider plans for the co-ordination of the health activities of the Federal Government. According to the plan submitted by Gen. Sawyer, the proposed department will be known as the Department of Education, Health and Welfare, with a secretary who is to be a cabinet officer, at its head, and an assistant secretary. It is proposed that the various agencies of the Federal government (except those within the army and navy), relating to health, education, social service and the rehabilitation of veterans, be transferred to the new executive department, each to carry with it its present powers, appropriations and personnel, intact. An executive committee, composed of Dr. Gilbert Fitzpatrick, of the American Institute of Homeopathy, Chicago; Dr. R. M. Olin, state health commissioner, Lansing, Mich., and Dr. William C. Woodward, of the Bureau of Legal Medicine and Legislation, of the A. M. A., was appointed to carry forward the work of the Conference.

Income Tax.

If you have not attended to your income tax return, it should begin to receive your attention. Failure to receive a form does not relieve the taxpayer of his obligation to file a return and pay the tax on or before March 15, 1923. Returns are required of every single person whose net income for 1922 was $1,000 or more and of every married person or head of a family whose net income was $2,000 or more. Exemptions are explained on forms 1040A for net income of $5,000 and less, and on 1040 for income in excess of $5,000.

As in the past, a doctor may claim as deductions the cost of supplies used in the practice of his profession, expenses paid in the operation and repair of an automobile used in making professional calls, dues to professional societies, subscriptions to professional journals, office rent, and the cost of fuel, light, heat and water used in his office, and the hire of assistants.

In case of illness or absence of the taxpayer from home, an extension of time should be secured from the collector of internal revenue of the district in which the taxpayer lives.

The Medical Society of the District of Columbia,

At its annual meeting in January, elected the following officers for this year: President, Dr. L. H. Reichelderfer; vice-presidents, Drs. J. Russell Verbrycke and Edith L. Coale; secretary, Dr. Coursen B. Conklin; corresponding secretary, Dr. Prentiss Willson, and treasurer, Dr. Edward G. Seibert.

Dr. H. H. Webb

Has left Osaka, Va., and is doing X-Ray work in Erie, Pa.

Dr. Ennion G. Williams,

State Health Commissioner, who has been confined to his home in Richmond as a result of "flu," is regaining his strength gradually and hopes soon to be at his work again.

Dinner to Senator Copeland.

Dr. Royal S. Copeland, Commissioner of Health of New York City, was tendered a dinner at Hotel Astor, February 12, on the eve of the assumption of his new duties as a United States Senator in Washington.

Dr. John H. Baird,

Formerly of Richmond, is on the staff of the U. S. Veterans' Hospital, No. 81, New York, N. Y.

Dr. and Mrs. Hunter B. Spencer

Have returned to their home in Lynchburg, Va., after a visit to Atlantic City, N. J.

Memory of Medical Student Honored.

Memorial services were held in Charlottesville, Va., January 31, for the late Jose Anselmo Lazo, of Nicaragua, who spent his first two years in this country studying medicine at the University of Mississippi. He entered the third year medical class at the University of Virginia in September, 1918, and, a little later, in response to call, volunteered to act as a nurse during the influenza epidemic. He later contracted the disease and died.

The occasion of the services was the unveiling of a modest granite headstone, erected by the Whitehead Literary Medical Society, which bears the inscription "Jose Anselmo Lazo, January 27, 1892—October 26, 1918. A medical student who gave his life for others in the epidemic of influenza."

The Abrams Cult,

Perhaps the latest of the fads to be hoisted on an imaginative sick public, is receiving some amusing criticisms in the Western medical journals. They being nearer the base of

operations, San Francisco, are perhaps getting the first influx of these new supposed to be "miracle" workers. The amazing thing is that even an unsuspecting public could be duped into believing some of the absurdities claimed by Abrams and his followers. We understand that there are at least two of the Abrams machines being used in this State.

The Richmond Tuberculosis Association

Held its annual meeting in this city February 1, at which time many matters of interest were discussed. It was announced that the amount received from the sale of Christmas seals was less than that for the preceding year, but it was hoped the deficit would be made up when full returns were received. Dr. Garnett Nelson was re-elected president, and Miss Nora Spencer Hamner, executive secretary.

Narcotic Regulations Modified.

The *Journal of the A. M. A.* announces that "Regulations governing the prescribing of narcotics in the treatment of incurable diseases and for aged and infirm addicts whose physical collapse from the withdrawal of the drug might be fatal have been modified by the Commissioner of Internal Revenue, with a view to preserving as far as possible professional secrecy with respect to such cases." A full explanation of these modifications should be secured by those prescribing narcotics.

Dr. Llewellys F. Barker,

Of Johns Hopkins University Medical School, will be the chief speaker at the annual meeting of the Sphex Club of Lynchburg, Va., to be held soon.

Dr. P. W. Boyd,

Winchester, Va., was one of the party of 200 surgeons from medical colleges and clinics of this country, all fellows of the American College of Surgeons, who sailed from New York, February 10, for South America. This visit is intended to bring the surgical faculties and professors of the two countries into closer relations. The party will return April 14. Many of the surgeons were accompanied by their wives and other members of their families. Dr. Boyd was accompanied by his daughter.

The Atlantic Medical Journal,

Which will represent the combined State Medical Associations of Pennsylvania and Delaware, and will be a successor to the *Pennsylvania Medical Journal*, will appear in April. This is the outcome of a suggestion made by Dr. Alexander R. Craig, late secretary of the American Medical Association, that a consolidation of the medical journals of Pennsylvania, Maryland and Delaware would centralize medical thought and purpose. The Delaware Society readily accepted the suggestion and fell in with Pennsylvania in the above arrangement.

Bequest to Hospital.

The Rockingham Memorial Hospital is the beneficiary of $10,000 in the will of Miss Clara Chaunceauline, who died in that city recently.

Dr. John M. Love,

Recently at the U. S. Veterans' Hospital, Oteen, N. C., has been transferred to U. S. Veterans' Hospital No. 84, Algiers, La.

Dr. N. T. Ennett,

Richmond, Va., announces that he is limiting his work to pediatrics. He has offices in Professional Building.

Dr. William P. Gilmer,

Recently of Clifton Forge, Va., sailed the latter part of January for Korea, where he went as a medical missionary under the auspices of the Southern Presbyterian Church. Dr. Gilmer graduated from the Medical College of Virginia in the class of 1916 and has many friends in this section who will be interested in his welfare.

Dr. S. C. Draper

Has returned to Southwest Virginia, having accepted a position with the Virginia Iron, Coal and Coke Company at Inman, Va., the first of January.

Dr. Beverley R. Tucker,

Of Richmond, by invitation, addressed the Prince Edward County Medical Society at Farmville, Va., on the evening of January 12, his subject being "Endocrinology." Preceding the address, a bird supper was given by Dr. R. L. Hudgins, in honor of Dr. Tucker, to the members of the Society.

Dr. Hare has Narrow Escape from Death.

Dr. J. Hampton Hare, Newland, Va., narrowly escaped death, the latter part of January, when his car overturned and he was caught under it. While on his way to see a patient, his car skidded in soft sand and completely overturned. When the mail driver, who witnessed the accident, reached Dr. Hare, his face was almost purple from the weight of the car on his neck, and he was unconscious for an hour after being rescued from his peril-

ous position. He suffered from severe shock and a sprained back.

Health Lectures for Women.

Dr. Mary B. Baughman, of Richmond, who graduated from the Medical College of Virginia last June, is giving a series of health lectures in this city, under the auspices of several women's organizations, to further the work of the Woman's Foundation for Health. Similar lectures are being given throughout the United States. They are open to all women and girls, without charge, and with or without membership in any of the co-operating organizations. Dr. Baughman, having been a student in sculpture, physical education and gymnastics, as well as medicine, is well fitted to give these talks.

Clinics and Collected Papers of St. Elizabeth's Hospital.

The above is the name of a volume now in press with the C. V. Mosby Company, of St Louis. It is to be the first volume of an annual issue of "Clinics and Collected Papers of St. Elizabeth's Hospital, Richmond, and includes many clinics not before published, as well as collected papers from members of the staff. So far as we are aware, this is the first time such a publication has made its appearance in the South and we wish for it a hearty welcome.

"Endocrine and other Organotherapeutic Preparations"

Is the title of a booklet just issued by Armour and Company, of Chicago. It contains articles upon the products that the title covers. A copy will be mailed to any physician or pharmacist upon request.

U. S. Civil Service Examinations.

The United States Civil Service Commission, Washington, D. C., announces open competitive examinations for the following:

X-Ray mechanician, to fill a vacancy in the Veterans' Bureau, Washington, and other vacancies requiring similar qualifications, applications to be received until February 20, 1923:

Assistant bacteriologist (food products), for vacancies in the Bureau of Plant Industry, Department of Agriculture, Washington, and similar positions, applications to be received until March 6, 1923;

Graduate nurse and graduate nurse (follow-up), for vacancies in the U. S. Veterans' Bureau and in the Indian Public Health Services, applications to be rated as received until July 3, 1923;

All citizens of the United States, men and women, who meet the other requirements, may enter the examinations.

Medical Officers Wanted.

The U. S. Civil Service Commission also announces open competitive examinations for Junior Medical Officer and Assistant Medical Officer (Roentgenology; Psychiatry), and for Medical Officer (Tuberculosis; Neuropsychiatry; Internal Medicine and Diagnosis, Physiotherapy), to fill positions in the Indian Service, the Coast and Geodetic Survey, the Public Health Service, and the Veterans' Bureau. Competitors will not be required to report for examination at any place, but will be rated on education and training, and experience. Applications will be rated as received until close of business on July 3.

Full information and application blanks may be obtained from the above named Commission at Washington, D. C., or the secretary of the board of U. S. Civil Service Examiners at the post-office or customhouse in any city.

Dr. Richard Eanes,

Who enlisted in the medical service of the army at the beginning of the World War, but who has been stationed for the past three years in Tientsin, China, will land in San Francisco the middle of February, from which point he will report for duty at Fitzsimons Hospital, Denver, Colorado. Shortly thereafter he is expected in Richmond to visit his parents, Mr. and Mrs. O. B. Eanes, at 103 East Cary Street.

Dr. Eanes, who was a former Richmond boy, graduated from the Medical College of Virginia in 1911, after which he located in Widen, W. Va., and practiced until he entered the army.

The American Child Health Association,

With headquarters at 532 Seventeenth Street, Washington, D. C., has been formed for the protection and promotion of child health in America. This association was formed by the amalgamation of the American Child Hygiene Association and the Child Health Organization and will have the full co-operation of the American Relief Administration, under the leadership of Herbert Hoover. The directors include many noted public health authorities and workers in child welfare problems.

To succeed, the new association needs the as-

sistance of every professional worker—every doctor, nurse, teacher, public health official and social service official, and wants the co-operation of the parents, and of the children themselves. The need of concerted action is apparent, when it is recalled that "America now ranks last of all nations advanced enough to have statistics on maternal mortality. It ranks sixth in infant mortality. Of its twenty-two million school children, thirty per cent. are so far under standard weight as to suggest a condition of malnutrition, and three million are in urgent need of medical attention."

The Association of American Medical Colleges

Will hold its annual meeting at Ann Arbor, Mich., March 2 and 3, under the presidency of Dr. Charles P. Emerson, Indianapolis. Dr. Frederick C. Zapffe, Chicago, is secretary. The chief topic of discussion at this meeting will be the new medical curriculum. Dr. Theodore Hough, dean of the Medical Department of the University of Virginia, will present a paper on "Shall the Premedical Requirement be Increased?"

Dr. John B. Deaver,

Philadelphia, conducted a surgical clinic last month, at the Presbyterian Hospital, Charlotte, N. C.

Member of Pharmacy Board.

Mr. W. L. Lyle, of Bedford County, has been reappointed a member of the Virginia State Board of Pharmacy, his new term of office beginning March 1, this year.

Dr. and Mrs. C. C. Tennant,

Of Charlottesville, Va., were recent visitors in this city.

Dr. and Mrs. Robert C. Byran

Have returned to their home in this city after spending some time in the Adirondack Mountains.

Dr. B. C. Keister,

Formerly of this State, has located at 2621 Fourteenth Street, Northwest, Washington, D. C.

Dr. A. Micklem

Advises us that his address is now Schuyler instead of Rockfish, Va.

Dr. Samuel L. Steer,

Recently of Paeonian Springs, Va., is now at 1507 M Street, Northwest, Washington, D. C.

Dr. T. Dewey Davis,

After a service at Tucker Sanatorium, Richmond, has moved to Professional Building, this city, where he is associated with Dr. Douglas VanderHoof.

Louisiana Almanac.

The 1923 Almanac, published by the Louisiana State Board of Health, has been received at this office, and we find it as attractive as former numbers. Many home-y truths are presented in a way which should catch the layman's attention and the jokes interspersed keep one in a happy frame of mind.

The Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals

Is to be held at Congress Hotel, Chicago, March 5, 6 and 7. Dr. Arthur Dean Bevan is chairman of the Council on Medical Education and Hospitals of the A. M. A.; Dr. Victor C. Vaughan, chairman of the Council on Health and Public Instruction of the A. M. A.; Dr. C. P. Emerson, president of the Association of American Medical Colleges; Dr. Davis A. Strickler, president of the Federation of State Medical Boards of the U. S.; Dr. Frank Billings, president of the American Conference on Hospital Service. An interesting program has been arranged.

Wanted.

Position as doctor's office assistant, by an undergraduate nurse with a knowledge of stenography and routine laboratory work. Splendid recommendations. Willing to start on moderate salary. Address "C. J. M.," care this journal.—(Adv.)

Obituary

Dr. James Merit Melton,

Of Crozet, Va., a prominent physician of Albemarle County, was instantly killed on the evening of January 10th, when his car overturned on the Charlottesville-Staunton turnpike, in making a curve. Dr. Melton was returning from visiting a patient and was evidently thrown through the top of his automobile when the accident occurred. His skull was fractured and his neck broken.

Dr. Melton was born in Nashville, Tenn., October 13, 1871, and studied medicine at Vanderbilt University, from which he graduated

in 1901. After spending four years in Nashville, he took up health work first in South America and later was employed by the Isthmian Canal Commission. He located in Virginia in 1910 and had been at Crozet since 1912. He was an enthusiastic member of the Albemarle County Medical Society and also a member of the Medical Society of Virginia. He is survived by his wife and one sister.

Dr. Frank Green Simmons

Died at his home in Richmond, January 27, after being a sufferer with tuberculosis some ten years. He was a native of Kentucky, and was 53 years of age. Dr. Simmons graduated in medicine from Vanderbilt University, Nashville, Tenn., in 1890, and then returned to his home town and practised until 1907, at which time he located in Richmond. He was for some time connected with the faculty of the Medical College of Virginia and was a member of the Medical Society of Virginia. Dr. Simmons was for six years associate physician at Mt. Regis Sanatorium, Salem, Va., having returned to Richmond several months ago. His wife and a daughter survive him.

A beautiful tribute was paid Dr. Simmons in the editorial columns of the *News Leader*, of January 29, in which was brought out the great service he rendered others, while himself fighting for life at a tuberculosis sanatorium.

Dr. Orion Baum,

For forty years a practising physician in Princess Anne County, Virginia, died at his home at Vine, Va., January 9, after an illness of only a few days. Dr. Baum was born in Princess Anne County, 67 years ago and received his early education at the Virginia Agricultural and Mechanical College. After this he studied medicine at the College of Physicians and Surgeons, Baltimore, from which he graduated in 1884. He had been a member of the Medical Society of Virginia since 1889.

Dr. James Philip Roy

Died at his home in Richmond, January 25, death being due to Bright's disease. He was a son of the late Colonel James P. Roy, U. S. A., and was born when his father was stationed at Ft. Leavenworth, Kan., 61 years ago, but had made his home in this city since he was 12 years of age. He studied medicine at the University of Virginia, from which he graduated in 1884. For some time, Dr. Roy demonstrated anatomy at the Medical College of Virginia and was for several years professor of orthopedic surgery in the same school. He had been a member of the Medical Society of Virginia since 1904.

Dr. Roy is survived by his wife and two sisters.

Dr. Spotswood Hayes Parker.

Died in Charlottesville, Va., January 8, after a long illness. He was a native of Portsmouth, Va., having been born there in 1881. He studied medicine at the University of Virginia, from which he graduated in 1904. For a number of years he made his home in Hartford, Conn., where he was one of the medical directors of the Travelers' Insurance Company. Dr. Parker married Miss Florence C. Jones, of Charlottesville, who, with four children, survives him.

Resolutions on the Death of Dr. E. Guy Hopkins.

At a meeting of the Richmond Academy of Medicine and Surgery, held on January 23, 1923, the following resolutions were adopted:

BE IT RESOLVED, That in the death of Dr. Erasmus Guy Hopkins, the profession of this State, the City of Richmond, and the Richmond Academy of Medicine and Surgery have sustained a great loss that will long be felt.

His professional life, in its conscientious devotion to duty, might well be taken as an ideal for the young men of his profession. The term genius, which is often lightly placed, attains its full meaning when applied to Dr. Hopkins.

In this body, where he was known so well, no eulogy of him is needed. Suffice it to say that with him died a brilliant physician, a modest kindly gentlemen, a splendid soldier.

BE IT FURTHER RESOLVED, That these resolutions be spread upon the minutes of this Society, that they be published in the VIRGINIA MEDICAL MONTHLY, and that a copy of them be sent to his family.

Signed,

W. LOWNDES PEPLE.
A. L. GRAY.
GARNETT NELSON.

Dr. William H. H. Tate,

Died at his home at Heflin, Va., the first of this month. He was 83 years of age and a native of Ohio. Dr. Tate graduated from the Louisville Medical College in 1875. He was a veteran of the War Between the States and lost an arm while fighting with the Southern forces in the battle at Seven Pines, near Richmond. His wife died several years ago.